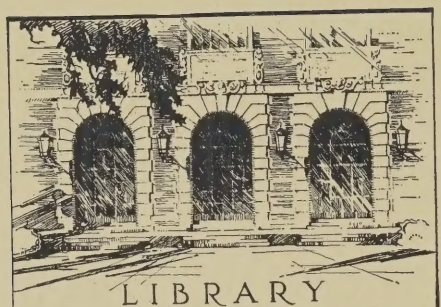

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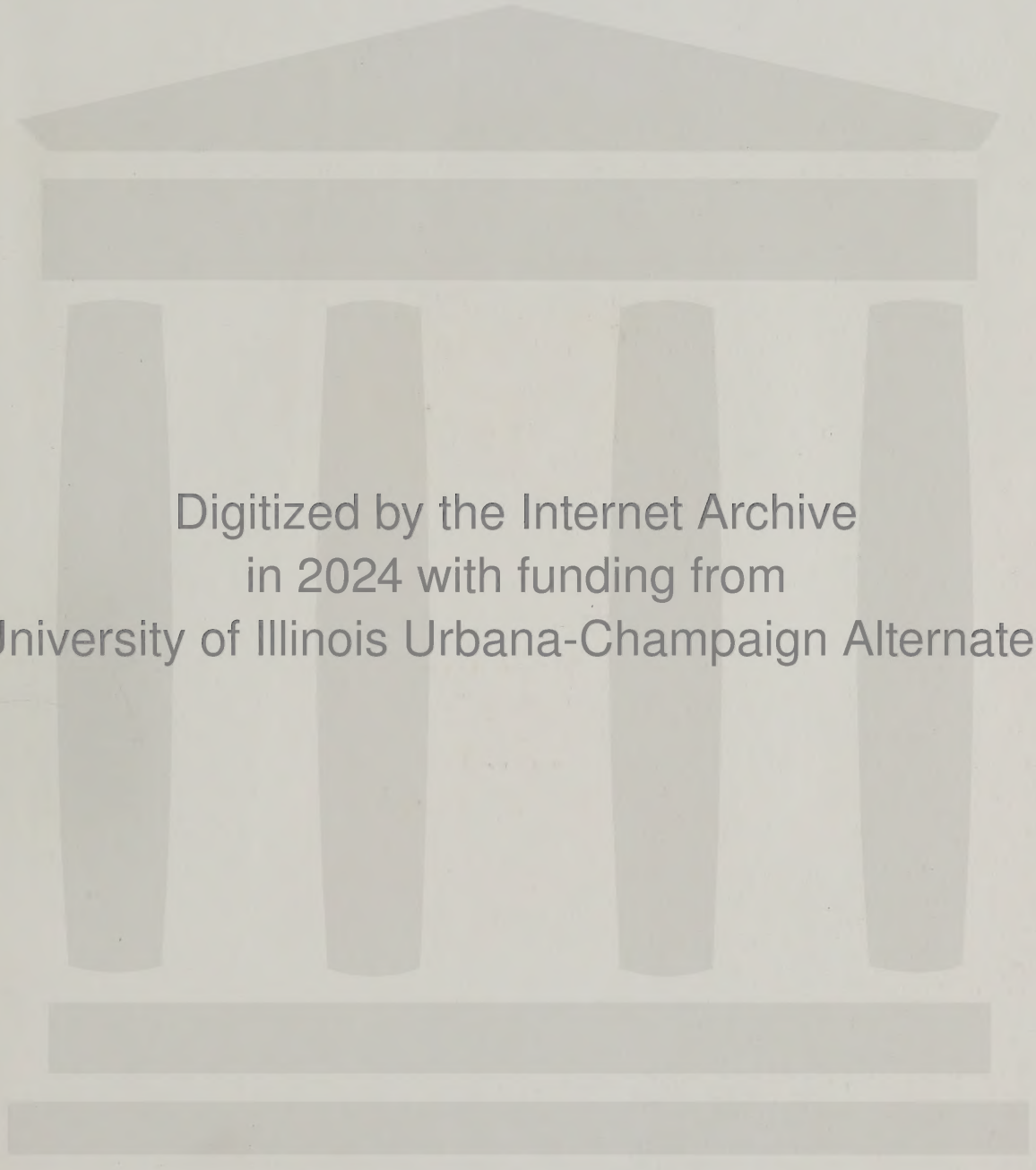

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LEAGUE OF NATIONS

Health Organisation

THE PUBLIC HEALTH SERVICES

OF

BULGARIA

BY

Dr. Ivan GOLOSMANOFF

Head of the Infectious Diseases Department and Chief Inspector of the Directorate of Public Health in Bulgaria, Member of the Permanent Committee of the Office international d'hygiène publique

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LEAGUE OF NATIONS

GENEVA, June 17th, 1926.

Health Organisation

THE PUBLIC HEALTH SERVICES

OF

BULGARIA

BY

Dr. Ivan GOLOSMANOFF

Head of the Infectious Diseases Department and Chief Inspector of the Directorate of Public Health in Bulgaria, Member of the Permanent Committee of the Office international d'hygiène publique

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ERRATUM

REFACE, *2nd line:* For "Unlike" read "Like".

PREFACE

Health legislation and administration form part of the activities which go to make up a nation's public life. Unlike political institutions, health institutions are not throughout controlled by a single authority and cannot be developed in accordance with a definite scheme. The innovations and changes effected in the course of time have mainly been the result of chance. Life itself has put forward its problems. It is the needs of the hour, in short, which have led the legislator and the administrator to take action. As may be easily understood, the conditions governing the problem of public health have varied enormously at different times and in different places. The technical weapons and the moral forces at the disposal of Governments have been wholly different, and as a result each public health organisation has assumed a form of its own.

Accordingly, any attempt to weigh the merits of foreign public health organisations is exceedingly difficult, even for health experts, and yet, in view of the complexity and the increasing number of international problems with which we are faced, a knowledge of these different institutions is urgently required. Without such knowledge it is hard to achieve any sort of co-operation and, in addition, any opinion which may be formed about the health conditions of a country is very liable to error.

Furthermore, reports on diseases supplied by different countries are difficult to compare with one another for the very reason that they come from different sources. Before any useful investigation can be carried out in this domain, the information provided must be arranged and harmonised, which demands a thorough knowledge of the various national health administrations.

The work of the Health Organisation of the League of Nations being purely international, the first care of this Organisation must be to remove as far as possible the many difficulties due to the diversity of sources. For this reason the Health Organisation decided to publish a series of monographs describing the form and working of the public health administrations in the different countries. For the writing of these reports it secured the assistance of persons holding prominent posts in the different public health organisations.

It was at first intended that all these monographs should be prepared on set lines. For this purpose the Health Section of the Secretariat of the League of Nations sent a memorandum to the authors of the monographs with a view to obtaining reports which could be directly compared one with another ; but most of the writers preferred a greater measure of freedom in framing their statements.

In the series we have undertaken to publish, health administration is considered from the general point of view only. It is our intention later to publish a number of studies on certain special aspects of public health, which will supply further and more detailed information on these different aspects.

In publishing the general studies, we have been greatly helped by the generous financial aid given by the International Health Bureau of the Rockefeller Foundation.

HEALTH SECTION OF THE SECRETARIAT
OF THE LEAGUE OF NATIONS.

Geneva, February 1926.

THE PUBLIC HEALTH SERVICES OF BULGARIA

GENERAL ADMINISTRATION OF BULGARIA.

The Government consists of the Head of the State, the representatives of the people and the Cabinet. The Head of the State is the King *(Tsar)*. The representatives of the people, who are elected every four years, each deputy representing 20,000 inhabitants, constitute the National Assembly *(Sobranje)*. The Cabinet is composed of ten ministers.

Bulgaria is divided into 16 provinces, 82 districts and 2,391 communes, of which 82 are urban and 2,299 rural, the total number of settlements being 5,652.

Each province is administered by a prefect, appointed by the Ministry of the Interior and assisted by a provincial council and a provincial committee. The districts are administered by sub-prefects. At the head of each commune is a mayor, who is assisted by one or more deputies elected by the municipal council ; the council is elected by the inhabitants. Questions of interest to the municipality may be submitted to a referendum at the demand of at least one-sixth of the electors. Sofia possesses a special communal organisation.

Division of Powers.

The legislative power is in the hands of the Crown and the National Assembly. The Government generally draws up laws and takes the initiative in matters of reform. Bills are laid before the National Assembly by the minister of the department responsible for their promulgation. Private members may also introduce bills, which must, however, have been signed by a quarter of the representatives in the National Assembly.

The legislative bodies of the communes are the communal boards. These boards must not, however, issue regulations which are at variance with the national laws.

The executive power is in the hands of the Crown, the ministers and the Cabinet.

Ministers issue executive regulations under the laws passed by the National Assembly; these regulations must be sanctioned by royal decree. Ministers cannot promulgate new laws or amend, add to, or replace existing ones. In exceptional circumstances, and subject to a decision by the Cabinet, the Crown may publish decrees having the force of law.

The prefects, assisted by the provincial councils, are the highest representatives of the executive power in the provinces. They may issue orders, which must not, however, exceed the scope of the national laws. The powers of sub-prefects are purely administrative.

In the communes, the executive power is represented by the mayors, whose orders have the force of law.

ORGANISATION OF PUBLIC HEALTH SERVICES.

The public health organisation consists of a central administration, namely, the Directorate of Public Health, and local administrations.

I. The Directorate of Public Health.

This forms part of the Ministry of the Interior. It is almost autonomous, however, and its Director has wide powers and maintains direct relations with the other Ministries. The Directorate of Public Health sees that health laws and regulations are properly applied, watches public health in general and reports on it every year; organises campaigns against epidemics, inspects pharmacies and public health institutions, and supervises the exercise of the medical and allied professions.

The Directorate is divided into five departments, viz. :

1. Public health ;
2. Infectious diseases ;
3. Hospitals, etc. ;
4. Pharmaceutics ;
5. Financial services.

The following also come under the control of the Directorate : The Chemical Institute (Public Health Department), the Bacteriological and Public Health Institutes (Infectious Diseases Department), the Central Depot of Pharmaceutical Products and Public Health Material (Pharmaceutical Department).

The heads of departments act as chief inspectors of their respective departments. They have assistant chiefs and subordinate staffs under their orders.

1. *Public Health Department.*

Its functions are the following :

(a) Urban sanitation (water-supply, drainage, etc.) ;
(b) Reclamation of marsh-land, conservancy of waterways, land drainage, etc. ;
(c) Medical inspection of schools, prisons, factories and hospitals ;
(d) Preparation and application of hygienic regulations in regard to streets and public institutions ;
(e) Inspection of food supplies ;
(f) Preparation of building schemes proposed by the Directorate.

The head of the Public Health Department is a doctor of medicine ; he is assisted by an engineer and an architect.

2. *Infectious Diseases Department.*

This department has the following duties :

(a) It watches the spread of infectious diseases and epidemics in neighbouring countries ;

(b) It supervises the epidemiological condition of the country ;

(c) It sees that laws, regulations and circulars relating to campaigns against infectious diseases are properly observed, and supervises the services in operation at public health stations on land and sea frontiers ;

(d) It submits proposals for the erection of frontier medical stations, bacteriological stations, isolation and disinfection centres, etc. ;

(e) It supervises the operation of the disinfection services and supplies them with staff ;

(f) It recruits bacteriological and epidemiological specialists ;

(g) It inspects institutes of bacteriology and hygiene, and the depots of serums, vaccines, medicaments and disinfecting material necessary to combat infectious diseases.

The head of the Infectious Diseases Department is a doctor of medicine. He is assisted by an epidemiological specialist (who also acts as chief of the epidemiological staff of the Public Health Directorate), a chief medical inspector for malaria, and an inspector for tuberculosis and venereal disease. He has also under his orders a subordinate staff and an engineer to operate disinfecting appliances. The malaria inspectorate, however, though forming part of the Infectious Diseases Department, is, in practice, very largely independent.

3. *Hospital Department.*

The duties of this department are as follows :

(a) It deals with the administration and working of hospitals, sanatoria, etc.;

(b) It supplies material and appliances to these establishments, and also to quarantine stations, ambulances, etc.

It is directed by a chief medical officer.

4. *Pharmaceutical Department.*

The Pharmaceutical Department has the following functions :

(a) It inspects pharmaceutical depots and State pharmacies ;

(b) It supplies them with medicaments, bandages, disinfecting material, disinfectants, etc. ;

(c) It controls, jointly with the malaria inspectorate, the quinine monopoly ;

(d) It issues licences to chemists (private, communal and State dispensaries) and wholesale chemists, supervises their professional activities, and also the quality and price of the articles they supply to the public ;

(e) It settles questions connected with the importation of medicaments.

The pharmaceutical division is directed by a chief chemist, who has under him a deputy chief ; both are qualified chemists.

5. *Financial Services Department.*

The duties of this department are as follows :

(a) It prepares the budgets of the Directorate of Public Health, after

consultation with the Director of Public Health, the heads of departments, and the General Medical Council ;

(b) It examines requests for credits submitted by the heads of departments.

The Financial Services Department is under the direction of a head of department, assisted by eight comptrollers, representing the Ministry of Finance, and by subordinate staff.

There is also attached to the Directorate of Public Health a medical statistician, who collects and arranges the data supplied in the annual reports of provincial medical officers and the periodical and special reports sent in by the various health authorities.

II. Advisory Organisations of the Public Health Directorate.

The *General Medical Council* consists of ten members, viz., the Director of Public Health, the Chief of the Army Medical Service, the President of the Bulgarian Medical Association, six doctors, and one member chosen from among the judges of the Courts of Appeal or Cassation.

The functions of the General Medical Council are as follows :

1. It examines and discusses draft health laws and regulations ;
2. It has to approve the budgets of the Health Directorate and the health budgets of provinces and large towns ;
3. It takes suitable steps to prevent the entry into the country of persons suffering from infectious diseases, and to prevent persons suffering from endemic diseases from moving from one part of the country to another ;
4. It draws up the official pharmacopœia and fixes the prices of medicaments ;
5. Its approval has to be secured for the opening of new pharmacies or the closing of existing ones, and for the opening of private hospitals or sanatoria ;
6. It analyses mineral waters ;
7. It holds the qualifying examinations for doctors, pharmacists, dentists and midwives ; it supervises the exercise of the medical and pharmaceutical professions, obstetrics, dentistry, etc., and settles questions relating to professional secrecy ;
8. It settles disputes in regard to doctors' fees.

The Council meets twice a week, and also holds special meetings when necessary. Its decisions become executory on approval by the Minister of the Interior and Public Health.

Attached to the Council is a *Pharmaceutical Committee*, composed of the head of the Pharmaceutical Department of the Health Directorate and two chemists. This Committee attends meetings of the General Medical Council when it is dealing with pharmaceutical questions.

III. Local Health Authorities.

Bulgaria is divided for public health purposes into sixteen provinces, corresponding to the administrative provinces, and directed by provincial medical officers. Each province is subdivided into medical districts, but these are more numerous (they

numbered 126 in 1923) than the administrative districts. There is a district medical officer at the head of each medical district. These districts, in their turn, are subdivided into medical sections (numbering 456), under the direction of " feldshers ". There are local health authorities in the provinces, districts and communes, which have public health councils.

1. *Provincial Health Services.*

Each health province has two health services : *(a)* the State health service and *(b)* the provincial council health service.

(a) The State Provincial Health Service supervises the application of health regulations and provisions and watches the state of public health in the province. It is directed by the provincial medical officer, who has authority over the district and municipal medical officers and all health institutions in the province. The provincial medical officer has to make two annual inspections of all the services placed in his charge, and also of private dispensaries and wholesale chemists'stores. He examines, jointly with the prefects, the health budgets of rural communes, and submits to the public health council of the province the health budgets of the provincial councils and urban communes.

(b) Health Service of Provincial Councils. — The provincial councils assist the Government in the protection of public health ; they provide in their budgets special credits for increasing the public health personnel, opening and maintaining hospitals, homes, etc., and distributing medicaments to the poor free of charge. The appointment of the health personnel of provincial councils is subject to the approval of the Directorate of Public Health, and this personnel has the same rights and obligations as those of the Government service.

2. *Health Services of Medical Districts.*

These services are under the direction of the district medical officers, who are themselves under the orders of the medical officer of the province. The district medical officer watches health conditions in populous centres and gives orders for any necessary improvements ; he investigates the causes of any prevalent diseases and the outbreak and spread of infectious diseases, arranges the measures to be taken against them, and organises health propaganda. He sees that health regulations and orders are properly observed, supervises the exercise of the medical profession, and inspects all the services under his charge at least twice a year; he has also to make any special inspections which may be required. Further, he examines poor persons free of charge at dispensaries and also at his own office. When asked to visit patients elsewhere than at the dispensary or his office, however, he is entitled to charge a fee. He sends in reports of his inspections to the medical officer of the province.

3. *Health Services of Medical Sections.*

The "feldshers" who are in charge of these services act as auxiliaries to the medical officers, and must carry out any instructions given them by the latter. They have to make tours of inspection of their sections twice monthly. Their duties consist in seeing that streets, fountains, wells and public premises are kept in a proper state of

cleanliness, and in preventing the formation of swamps, ponds or pools of stagnant water, etc. They have power to report offenders.

4. *Communal Health Services.*

Every commune with a population of over 4,000 possesses a communal health service, directed by a communal medical officer. The larger communes have several such officers, as well as veterinary surgeons, " feldshers ", midwives, health inspectors, disinfecting staffs, etc.

The communal health service sees that the health regulations are properly applied, supervises the exercise of the medical profession, inspects the sanitation of streets, markets, restaurants, hotels, private dwellings, public buildings, prisons, workshops and provision shops, and also inspects foodstuffs. It organises precautions against infectious diseases, examines prostitutes twice weekly, organises free medical services for the poor at communal dispensaries or in the patients' homes, and supervises school hygiene.

IV. Organisations which are Consulted by the Local Health Authorities.

Every province, district or commune to which a medical officer is attached has a health council.

The provincial health councils consist of fourteen members, the prefect being *ex officio* chairman and the provincial medical officer vice-chairman. These councils must also include three other doctors, an engineer, an architect, a veterinary surgeon, a judge, the inspector of schools, and the mayor of the capital of the province.

District health councils consist of eleven members, and communal health councils of six members. These councils supervise public health in their respective areas, and also the water-supply, drainage, reclamation of marsh-land, sale of foodstuffs and sanitation of private dwellings. They take measures to put down epidemics and organise the public medical relief services.

The decisions of district and communal health councils have to be passed by the provincial health councils, whose decisions are in turn subject to the approval of the General Medical Council. They are empowered to impose fines of from 250 to 625 levas. The health councils are summoned once a month by the medical officer of the province, district or commune, as the case may be ; special meetings are also held when necessary.

V. Frontier Health Service.

The Bulgarian frontier is divided into quarantine sectors under medical officers. There are three permanent sectors, *Burgas* and *Varna* on the Black Sea and *Svilengrad* on the Greek frontier on the Constantinople-Sofia-Western Europe railway route. Other quarantine sectors are formed at different points as and when circumstances require.

There are health surveillance stations in the smaller ports and at all points where railways or roads cross the Bulgarian frontier. The medical officers in charge of quarantine sectors are assisted by health inspectors (" feldshers "), health police and disinfection staffs. Under the Quarantine Regulations (1904), the quarantine officials in charge of health surveillance stations should be qualified doctors, but owing to the lack of

doctors these posts are at present filled by "feldshers". When an outbreak of infectious disease is declared in a neighbouring country, these surveillance stations are closed ; the medical officer in charge of the quarantine sector carries out a medical inspection of shipping, examines passengers, issues bills of health, and sees that the health regulations are properly observed. Quarantine officials have the same powers and duties, except that they cannot issue bills of health.

VI. Auxiliary Charitable Organisations.

1. *The Bulgarian Red Cross Society*, founded in 1883, has, since March 1884, belonged to the International League of Red Cross Societies. It carried out its duties, so far as its resources allowed, during the Balkan wars and the world war. At present there are only four branches of this Society in existence.

The aim of the Society is the improvement of the national health by means of health propaganda, the introduction of the system of visiting nurses, etc. Owing to lack of funds, however, it has not yet been able to carry these schemes into practice. It publishes a journal in Bulgarian, entitled *The Health Review*, which carries on health propaganda. It has an up-to-date hospital with 80 beds at Sofia, and since 1900 has also possessed a training school for nurses.

2. *The Bulgarian Anti-Tuberculosis Society* watches the spread of this disease in Bulgaria, organises anti-tuberculosis propaganda, founds school colonies for children who are predisposed to tuberculosis, and opens anti-tuberculosis dispensaries. It obtains funds by means of members' subscriptions and by gifts in money and in kind from the Government, the provinces, communes, private associations, etc. It has a central committee and sections at *Sofia*, *Stara-Zagora*, *Svogje*, *Plevna* and *Trnova*.

The health organisation of Bulgaria is based on the principle of centralisation. Its public health legislation, however, which dates from 1909, has not kept pace with the development of medical science, and no longer meets present-day requirements. Four official schemes of health legislation have been drafted in the course of the last ten years, but have never been passed by the National Assembly owing to political developments since 1912, and a new bill is now in course of preparation.

HEALTH PERSONNEL.

1. *Doctors.*

At the time of Bulgaria's emancipation there were barely twenty Bulgarian doctors in the country. Accordingly, foreign doctors had to be called in to carry on the national health services. The Government and certain provinces and communes offered scholarships to enable Bulgarian students to study medicine or complete their studies abroad, and by 1914 the number of doctors had risen to 728, there being thus one doctor to every 5,958 inhabitants — a very low proportion compared with that of other countries.

The lack of doctors was most acutely felt during the world war. The Government took this problem actively in hand, however, and in 1918 a Faculty of Medicine was

established at Sofia under the auspices of the Ministry of Education. This Faculty admits 85 men and 15 women Bulgarian students every year, besides 15 Russians, the students being chosen from the most successful matriculation candidates. The course of study lasts six years, the curriculum being as follows :

First year : Chemistry, physics, botany, zoology and anatomy.
Second year : Anatomy, physiology, histology, embryology and physical chemistry.
Third year : General pathology, pathological anatomy, bacteriology, serology, internal pathology, surgery and pharmacognosy.
Fourth year : Children's diseases, pharmacology, medical clinic, surgical clinic, obstetrics and gynæcology.
Fifth year : Medical clinic, infantile clinic, surgical clinic, dermatological and venereal clinic, nervous and psychical disorders.
Sixth year : This year is devoted to practical work in medical, surgical, obstetric, ophthalmic, pædiatrical and dermatological clinics.

Students are examined annually. The Faculty of Medicine comprises 19 professors and five lecturers. At the end of 1923, four students had obtained the medical doctor's degree in the Faculty of Sofia, and there were in the whole country 908 qualified Bulgarian doctors. Of these, 66 obtained their State diploma in 1923. There are also some 200 refugee Russian doctors, of whom 107 are in the various branches of the Public Health Directorate. A quarter of all the doctors in Bulgaria live at Sofia, where there is one doctor for every 750 or 800 inhabitants. There are very few doctors in private practice in the rural centres of population. Inhabitants of country districts generally have to go to the district medical officer for treatment.

Under the Public Health Protection Law, all candidates for the medical profession, except those holding the medical diploma of the Faculty of Sofia, must pass a State examination. Candidates for the State examination must be Bulgarian subjects and must hold the matriculation certificate of a Bulgarian secondary school and also a medical degree. The State examination is conducted by a board of three members of the General Medical Council specially appointed by that body for each examination. The syllabus of the examination is prescribed in the State Examination Regulations (1904) regarding the qualifications for the right to practise as doctor, chemist, dentist, or midwife in Bulgaria. The State examination consists of a written test, namely, a thesis on legal medicine and a thesis on the clinical branches, and also a clinical examination, the candidate being required to examine three patients, form a diagnosis and prognosis of their cases, and prescribe the necessary treatment.

Public medical officers must also possess certain special qualifications. The Director of Public Health, for example, is appointed by royal decree, being selected from those doctors who have been practising for at least ten years and are well known for their work in connection with the health administration. The medical officers in charge of quarantine sectors are chosen from among officials who have already had several years' administrative experience and are acquainted with the principal foreign languages. No special qualifications are required for district malaria inspectorships. The Secretary

of the Directorate of Public Health must be a doctor or "feldsher" of marked administrative ability.

The public health duties of medical officers are defined by the Public Health Protection Law and the Regulations regarding the Powers and Duties of Medical Practitioners (1904).

On the outbreak of an epidemic, or in case of emergency, the Government calls upon private medical practitioners to occupy temporary paid posts in the public health services. Doctors are required to attend women during confinement, poisoning and accident cases, and all cases involving grave danger. Doctors must notify the authorities of any cases of infectious diseases and must take all necessary measures of isolation and disinfection.

Before the recent wars, the Directorate of Public Health had organised six-months finishing courses at the Alexander Hospital, Sofia, and used to send a number of doctors, selected by competitive examination, to foreign countries for two years' post-graduate work. Since the restoration of peace, however, the Directorate has temporarily been obliged, owing to lack of funds, to give up the finishing courses, and also to discontinue its travelling scholarships. Public medical officers receive a monthly salary varying from 2,500 to 4,500 levas, inclusive of cost-of-living allowance. This salary constitutes practically their entire income, as their duties take up nearly all their time. Seeing that since the war the cost of living has increased forty times, whereas the wages of subordinate officials have only increased about twenty-two times, and the salaries of higher officials nine times, it will be realised that the position of Government officials in Bulgaria constitutes one of the most serious social problems with which the country is faced.

The incomes of doctors are lower than those of members of any of the other liberal professions — lawyers, engineers, etc. — and consequently great difficulty is experienced in recruiting officials for the public health services.

In addition to the difficulties already mentioned, there is the uncertainty of tenure attached to posts in the health administration, these officials being always at the mercy of political vicissitudes.

The State Officials Law allows civilian officials the right to combine in defence of their professional interests, and Bulgarian doctors have formed a Bulgarian Medical Association, the objects of which are to create a link between its members, to endeavour to improve their general position, to help doctors in straitened circumstances, and to carry on health propaganda. The Association has a relief fund and publishes a monthly journal, entitled *Archives of the Bulgarian Medical Association*. It has 625 members.

2. *Dentists.*

In 1888 there were only two dentists in Bulgaria. Since then, however, young Bulgarians have been going abroad to study dentistry, and at the end of 1923 the number of dentists established in Bulgaria was 217, or one dentist to every 22,400 inhabitants. Dentists have to pass a State examination, which is open to candidates who hold a certificate showing that they have received a secondary education and have obtained a dentist's diploma. The examination is held by a board of three members, two of whom

must be members of the General Medical Council, the third being a dentist nominated by that body. The examination consists of written, oral and practical tests. Dentists are not allowed to treat other affections than those in which they have specialised, or to act as anæsthetists. There is an Odontological Association, which protects the professional interests of dentists, its organ being the *Odontological Review;* there is also a Surgeon-Dentists' Association.

3. *Chemists.*

At the end of 1923, there were in Bulgaria 68 State drug dispensaries attached to hospitals, 18 communal dispensaries and 191 private dispensaries. The law requires that dispensaries and wholesale chemists' stores shall be kept by qualified chemists of Bulgarian nationality, who may, however, also employ dispensers. Chemists have to pass a State examination, which is open to candidates holding a matriculation certificate, a dispenser's diploma, and a chemist's diploma. The examination is held by a board consisting of two doctors, who must be members of the General Medical Council, a pharmacist, who must be a member of the Pharmaceutical Commission, and a pharmaceutical chemist. The examination consists of written, oral and practical tests.

Candidates for the dispenser's diploma must hold a matriculation certificate and a certificate showing that the holder has had at least two years' training in a dispensary.

Private dispensaries are operated under licence. Licences are granted to communes (to which preference is always given) and to qualified chemists of Bulgarian nationality who have worked for at least four years in a State, provincial or communal dispensary.

Drug stores are stores where medicaments, chemical products and appliances are sold wholesale. Licences are required for these also, subject to the same conditions as those applicable to dispensaries. At the end of 1923, there were twenty-four such wholesale chemists' stores in Bulgaria.

Doctors are forbidden to prepare or sell medicines unless they live more than ten kilometers from a dispensary. The official pharmacopœia is the Russian Pharmacopœia No. VI, but chemists are allowed to use medicines from other pharmacopœias when prescribed by a doctor. The prices of medicines, bandages, etc., are fixed by the General Medical Council.

At the end of 1923, there were in Bulgaria 346 chemists, of whom 21 were employed at State dispensaries, 19 at communal dispensaries, and 275 at private dispensaries. The number of dispensers at that time was 625, of whom 43 were employed at State dispensaries and 582 at communal or private dispensaries. There is no University Faculty of Pharmacy in Bulgaria.

4. *Midwives.*

The first school of midwifery was founded in Sofia in 1895. The courses were originally arranged to last three years, but this period was afterwards reduced to two, and recently single-year courses were instituted for midwives desiring to practise in country districts.

In 1924, the number of licensed midwives in urban districts was 549, and in country districts 286. In 1914, the total number was only 292. Midwifery candidates must pass

a State examination if they have not studied in Bulgaria. In order to be eligible for this examination, candidates must hold a diploma showing that they have taken a course at a school of midwifery recognised by the General Medical Council, and entitling them to practise in the country where they completed their studies. The examinations are held by a board consisting of two members of the General Medical Council and the Director of the Sofia Maternity Institute. A special syllabus of the examination is issued. Midwives can be called upon at any hour of the day or night. They are forbidden to operate or to procure abortion, and they are required to keep a register of normal and abortive births.

5. *Feldshers.*

Feldshers were introduced into the public health service owing to the shortage of civilian and military doctors, and are intended to do their work when doctors are not available.

The feldsher acts as an assistant to a doctor and has to carry out the doctor's orders.

During the period between the emancipation of Bulgaria and the end of the world war, some 15 courses were arranged for civil and military feldshers. The period of study was originally fixed at three years, and candidates were required to have received a secondary education. Subsequently, however, the courses were shortened to two years.

Under the Public Health Protection Law the rank of feldsher was granted to persons who passed the State examination after having successfully completed their courses at a feldshers' college, or who passed (before 1909) through a military feldshers' college. This law was amended in 1921, and now all non-commissioned officers of the medical corps can be graded as feldshers, and all privates of the medical corps are eligible to take the State examination. The number of feldshers was 468 at the end of 1914, but by the end of 1923 the number had risen to 1,735, of whom 696 were in the public health service. After ten years in the service of the State, or of a province or commune, a feldsher has the right to practise medicine in country districts where there is no medical officer or section feldsher.

6. *Public Health Inspectors.*

Public health inspectors act as assistants to communal medical officers. Every commune of more than 4,000 inhabitants must have at least one public health inspector. Their duties consist in seeing that public and private buildings are kept in a proper state of cleanliness, inspecting foodstuffs, arranging for the isolation of cases of infectious disease which are being treated at home, and preparing lists of persons requiring vaccination or re-vaccination. Privates in the army medical corps may become public health inspectors on passing an examination. As a rule, the duties of public health inspection are performed by feldshers.

7. *Nurses.*

The first school for nurses was founded in 1900 by the Bulgarian Red Cross, and was the first nurses' school in the Balkan Peninsula. The course originally lasted one year, but was afterwards lengthened to a year and a-half, and, recently, to two years. In order

to be admitted to this school, candidates must have passed through the sixth class at a secondary school (tenth educational year). The school is classed as a special middle school. Between April lst, 1900, and July 31st, 1924, 289 nurses completed their studies there. There are only 158 nurses employed in Bulgaria, of whom 110 are Bulgarians and 48 Russians. The grade of nurse is granted to any woman who has successfully completed the course at a nurses' school recognised by the General Medical Council as a special middle school. The duties of nurses are defined by the regulations issued in 1924. Nurses have a Florence Nightingale Association, which publishes a journal entitled *Thought.*

The subordinate health personnel (feldshers, midwives, nurses and administrative staff) have combined to form an association entitled the " Medical and Veterinary Staff Union ", founded in 1884. This association aims at protecting the general and professional interests of its members. At present it has a membership of 2,818, of whom 1,609 are medical feldshers, 396 veterinary feldshers, and 602 midwives. It has an organ, *The Cry of Health*, and also issues a popular journal called *Medical Thought.*

MEDICAL RELIEF

After the emancipation of Bulgaria, the medical officers of the public health services had to provide medical attendance for the population generally, as the private medical practitioners in the country had fallen into discredit. In order to induce people to avail themselves of the services of doctors, the State provided medical attendance free of charge. The army exercised a considerable influence in this direction, and since the war the services of doctors have been widely used. The medical relief service provides :

1. Consultations at dispensaries ;
2. Hospital treatment ;
3. Attendance at home ;
4. Free medicine.

Consultations are given at fixed hours at dispensaries, hospitals and district or communal medical offices. The feldshers of the various health areas give first aid wherever accidents or outbreaks of infectious disease occur, and either send patients to the dispensary or have them examined by a doctor in their own homes. Patients in good circumstances are charged for treatment and are sent to first-class hospitals.

Patients are examined free of charge at district medical officers' dispensaries and second- and third-class hospitals. All patients who cannot be treated at home or have to be isolated are admitted to hospital. Cases of plague, cholera, smallpox, leprosy, typhus, relapsing fever, enteric, dysentery, scarlet fever, diphtheria, erysipelas, puerperal fever, malignant pustules and venereal diseases are treated free of charge if the patients declare themselves unable to pay. State officials, Bulgarians and foreigners who are seriously ill are treated free of charge, if sent to a dispensary or hospital by the health authorities.

Nationals of countries with which Bulgaria has concluded special conventions for the purpose are treated free of charge on presenting certificates of indigence issued by their consulates. Bulgaria has concluded such conventions with the Kingdom of the Serbs, Croats and Slovenes, Czechoslovakia, Roumania and Italy.

Communal doctors are bound to give their services to women during and after confinement.

Infectious patients and all State officials can obtain medicine free of charge from the dispensaries where they were examined.

In 1923, 161,271 patients were examined at the dispensaries of State hospitals ; 843,526 at district medical officers' dispensaries ; 300,125 at communal dispensaries ; 74,682 at other dispensaries ; making a total of 1,389,604 patients examined.

In 1923, 76,486 patients were treated at the State hospitals. The total number of days' hospital treatment given was 1,296,797, and the average number of days' treatment per patient was 17. The number of surgical operations performed in 1923 was 18,000.

HEALTH INSURANCE.

Health insurance for the workers was introduced in Bulgaria on March 31st, 1905, by the " Law regarding Relief Funds for Workers in Public Undertakings ".

On July 1st, 1924, all previous legislation was superseded by the Social Insurance Law, whereby all workers were insured in respect of accidents, sickness, maternity, disablement and old age. State officials also benefit under the State Officials' Pensions Law.

Insurance is compulsory for workers, employees, small artisans, agriculturists, persons engaged in trade, and all persons exercising the liberal professions, but is optional for State employees. Accident insurance premiums for workers and employees are paid by the masters, but premiums for sickness, maternity, disablement and old-age insurance are paid in equal shares by the insured, the employer and the State. The amount payable is proportionate to the wages of the insured. For a daily wage of 15 levas, each of the three parties pays 6 levas per week ; for a wage of 16-30 levas, 8 levas ; for a wage of 31-40 levas, 10 levas ; for 46-60 levas, 12 levas, and for over 60 levas, 16 levas per week. These sums constitute a fund called the Social Insurance Fund, from which all insurance payments are made. Every worker of either sex must have a personal health insurance card ; this is issued by the communes free of charge after a medical examination by the communal doctor, and certifies that the holder is fit for work. It is handed over to the employer, who returns it to the worker when he leaves his employment. In case of illness, the person insured is entitled to nine months' medical treatment per year, and in case of accident he is given treatment until cured. During the whole period of his illness he receives an allowance proportionate to his wages and varying in amount according to

whether he is treated at home or in hospital. If he is not cured in nine months, he receives thereafter the allowance he would draw if treated at home.

In the event of an accident involving permanent disablement, the insured receives a pension proportionate to his wages at the time of the accident. In the case of death, the surviving dependents receive a pension proportionate to the insured's wages at the time when he was taken ill or met with his accident.

Sick persons are treated in State hospitals and sanatoria. The Social Insurance Fund is sufficiently large to allow of the erection of a hospital, sanatorium and dispensary. Any qualified doctor can practise under the social insurance scheme, and patients are free to choose their own doctors. The supervision of diagnoses is carried out by medical inspectors in the insurance service, and the supervision of the supply of pharmaceutical products is entrusted to a chemist also in that service.

The following table gives a survey of the income and expenditure of the Social Insurance Fund and the contributions made between 1919 and 1923 :

Year	Insured Workers (Male and Female)	Capital at beginning of Year	Receipts				
			Interest on Capital	Contributions			Receipts from Other Sources
				By Masters	By Workers	By the State	
		Levas					
1919	34,720	4,632,901	267,699	928,380	738,388	1,000,000	611,118
1920	62,364	5,566,528	404,606	1,543,649	1,449,837	1,000,000	492,076
1921	97,546	9,466,528	569,427	2,349,944	2,333,025	1,000,000	612,690
1922	112,242	13,166,528	748,086	2,756,980	2,640,659	1,000,000	596,867
1923	125,680	16,656,526	872,640	2,826,567	2,826,567	1,000,000	783,725

Year	Expenditure				Pensions at end of Year.			
	Relief		Disablement Pensions.	Other Expenditure	Paid to Insured in Person.		Paid to Surviving Dependents.	
	Accident	Illness			Number	Payments	Number	Payments
	Levas					Levas		Levas
1919	38,885	512,302	71,581	326,374	44	15,648	89	50,530
1920	77,012	1,016,011	92,756	82,250	66	18,930	103	56,629
1921	99,502	1,909,796	113,756	522,619	89	58,800	117	83,689
1922	298,833	3,574,729	270,082	786,702	119	101,200	132	86,905
1923	375,058	6,968,010	313,064	702,234	161	151,600	153	117,385

HOSPITALS, ETC.

There were 108 hospitals and similar establishments open during the year 1923, the total number of beds being 6,686, or one bed to 750 inhabitants. There are 85 public hospitals (84 State and one communal), four hospitals belonging to charitable societies, and 19 private hospitals. Of the State hospitals, 14 are ranked first-class, 17 second-class and 47 third-class, whilst six are hospitals for special purposes.

The first-class hospitals are in the towns of Sofia, Burgas, Varna, Shumla, Rustchuk, Trnova, Plevna, Lovech, Vratza, Vidin, Kustendil, Philippopolis, Stara-Zagora, and Slivno. These hospitals include 17 wards for internal diseases (two clinics), 14 surgical wards (two clinics), five obstetrical and gynæcological wards, seven wards for skin and venereal diseases (one clinic), two ophthalmic wards (one clinic), one oto-rhino-laryngeal clinic, four ophthalmo-oto-rhino-laryngeal wards, two psychiatrical wards, one child-welfare department, five tuberculosis wards and one infectious diseases ward at Sofia.

The number of beds in the various first-class hospitals varies between 80 and 300, the total number in these hospitals being 3,610.

The medical staffs of first-class hospitals consist of the following :

A medical director ;
Medical heads of departments ;
Assistant doctors, first class ;
Assistant doctors, second class ;
Voluntary assistant doctors ;
Chemists ;
Dispensers ;
" Feldshers " ;
Nurses.

At the head of each department is a doctor, who has under him assistants, " feldshers ", etc. The director is responsible for the working of the hospital as a whole and for the technical operation of his own department. First-class hospitals also have dispensaries.

The principal hospital in Bulgaria is the Alexander Hospital at Sofia, which was founded in 1879 and was established in 1884 in the five main blocks which it still occupies. It possesses twenty-six buildings and has fifteen departments, seven of which are used as university clinics pending the erection of special buildings. There are 1,200 beds. In 1923 the hospital staff was composed as follows :

Professors	14
Assistants	41
Unpaid assistants	8
Doctors	33
" Feldshers "	21
Nurses	56
Subordinate employees	368
Total	541

The seventeen second-class hospitals are situated in the chief towns of districts. They have from twenty to a hundred beds each, the total number of beds being 780.

The staffs of these hospitals consist of two doctors, one being entitled the director and the other the assistant medical officer.

Both these doctors treat the patients in the hospital and also those who come to the dispensaries for consultations.

The forty-seven third-class hospitals are situated in small towns and large villages. They have from ten to twenty beds each, the total number of beds being 670. They take persons suffering from infectious or other serious diseases, and they also provide out-treatment at their dispensaries.

The third-class hospitals are under the charge of the district medical officers, assisted by the hospital doctors.

These three classes of hospitals are maintained by the State.

There are the following special hospitals :

The Sofia Maternity Home, with 134 beds (clinic) ;

Two sanatoria for pulmonary tuberculosis (one at Iskretz, with 100 beds, and one at Troian, with 50 beds) ;

A sanatorium for surgical tuberculosis, near Varna, with 170 beds ;

Two lunatic asylums for incurables, with 330 beds.

In all, there are 784 beds in the special hospitals. The average cost of a day's treatment in hospital is estimated at 75 levas.

There are also :

A communal hospital, with 40 beds, at Rustchuk ;

Nineteen private hospitals, with a total of 400 beds ;

Four hospitals belonging to charitable societies, with a total of 402 beds.

Under the Public Health Protection Law, any person who can offer sufficient guarantees can obtain permission from the Ministry of the Interior to open a hospital. Private hospitals must be under the charge of a qualified doctor, and their regulations must be approved by the General Medical Council. Private hospitals are placed under the supervision of the local authorities, and are not allowed to admit patients suffering from acute infectious diseases.

The hospital service is divided into the medical branch, which is under the supervision of the Public Health Directorate, and the administrative branch, which is supervised by the departmental medical officers. The only institutions which are under the immediate control of the Public Health Directorate itself are the Alexander Hospital, the Sofia Maternity Home, and the Sanatoria at Iskretz and Varna.

The first- and second-class hospitals have a medical board which deals with medical and scientific questions, the administration of the hospital service, etc. Any provincial or district medical officer or private practitioner is eligible, if he wishes, to join this board.

MEASURES AGAINST INFECTIOUS DISEASES.

I. General Measures.

The Government, provincial councils and communes are all actively engaged in preventing and putting down infectious diseases.

The Government — that is to say, the Public Health Directorate — prepares public health laws, regulations and orders, sees that they are enforced, and takes steps to protect the country against the importation of tropical diseases. The provincial councils and communes assist the Government in this work, and keep a register of cases of infectious diseases which are notified in their respective areas.

1. *Health Measures at Frontiers.*

Under the International Health Convention of Paris (1912), which was ratified by the Bulgarian National Assembly in 1922, the signatory States must notify each other, through the diplomatic or consular officials in their respective capitals — or, in their default, by telegram — of the first verified cases of plague, cholera or yellow fever.

Before the war the Bulgarian Public Health Directorate received such information through the Ministry of Foreign Affairs, but it now receives it direct, by telegram, from the Bulgarian diplomatic or consular officials in other countries. Generally speaking, the Convention of Paris is not yet observed very strictly, and the machinery of the epidemiological information service does not work as smoothly as might be wished. Moreover, although the Directorate of Public Health receives twenty-three periodical health reports and bulletins from foreign countries, these generally reach Sofia too late to be of use.

Bulgaria has concluded a special convention with the Kingdom of the Serbs, Croats and Slovenes for the purpose of organising a direct epidemiological intelligence exchange service between the heads of the health administrations.

This special convention — which is based on the principles of the International Health Convention of Paris — has been signed and ratified by both Governments, and will come into force shortly. Since it was signed, the Bulgarian and Serb-Croat-Slovene health administrations have regularly exchanged epidemiological intelligence. The first verified cases of plague, cholera or yellow fever are notified by telegram, and cases of typhus, relapsing fever, enteric fever, dysentery, influenza, encephalitis lethargica, epidemic cerebro-spinal meningitis, and polyo-encephalitis are notified by post without delay. Immediate notification is given whenever an area is declared infected or free of infection. Conterminous provinces exchange bulletins weekly (or every ten days in Bulgaria) regarding notifiable infectious diseases. All notifications of infectious diseases, whether by telegraph or by post, are sent free of charge.

As the only information generally transmitted from Constantinople through the diplomatic channel is the notification of first cases of notifiable diseases, the medical officers in charge of the frontier stations at Burgas and Varna have to notify Sofia by telegram of all fresh cases occurring at Constantinople of which they may learn from the bills of health of vessels arriving from that city.

Owing to her geographical situation, Bulgaria is exposed to attack by plague, cholera, smallpox and typhus from the East — Russia, Turkey, Greece, Syria, Palestine, Egypt, etc. — where there are numerous centres of these diseases.

The measures prescribed by the International Health Convention of Paris are applied in Bulgaria to passengers, luggage, goods, vessels, railway rolling-stock, etc. Traffic between Bulgaria and the Kingdom of the Serbs, Croats and Slovenes will shortly be brought under the provisions of the special convention concluded between the two kingdoms. The maritime health service is subject to the Regulations regarding Quarantine, Quarantine Medical Officers and the Health Service in Black Sea Ports (1904). Special measures against plague on land frontiers are provided for (Instructions for the Health Service on Land Frontiers in the Case of a Threatened Outbreak of Plague, 1924). According to the Regulations regarding the Surveillance of Passengers arriving from Countries which have been declared Infected (1924), any passenger coming from such a country is given a " health passport " on arrival in Bulgaria. His ordinary passport is sent to the local health authorities of his place of destination, and is returned to him at the end of the period fixed for surveillance.

There are four quarantine stations in Bulgaria, situated respectively at *Varna*, *Burgas*, *Svilengrad* and *Rustchuk;* five health surveillance stations on the Black Sea ; one surveillance station on the Dobrudja frontier, one on the Danube, three on the Serb-Croat-Slovene frontier, and three on the Greek frontier.

The Varna Quarantine Station comprises the office of the post medical officer and a lazaret ; it also possesses a Clayton apparatus. The office of the port medical officer is on the premises of the port authority, which also contain a bacteriological laboratory and an office for the subordinate staff. The lazaret is situated on the opposite coast of the Bay of Varna, and consists of a disinfection station, an isolation building for the sick, three isolation buildings for passengers under observation, a depot and a kitchen.

The disinfection station is equipped with disinfecting and delousing plant which can deal with twenty-four persons in an hour, including their personal effects. The lazaret of the Varna Quarantine Station is not, however, adequate for present requirements ; a reconstruction scheme has been prepared, but unfortunately the financial situation of the country renders it impracticable.

The port of Varna is open to all vessels, whether infected, suspected or free of infection. The Varna Quarantine Station is a very important one, not merely for Bulgaria, Roumania and the Kingdom of the Serbs, Croats and Slovenes, but for the whole of Central Europe.

The Burgas Quarantine Station comprises the office of the medical officer, which is on the premises of the port authority, and a lazaret established on the opposite coast of the Bay of Burgas. The lazaret is constructed in accordance with the specifications of the International Convention of 1903 ; it has four wings, which are at present occupied by refugees from Thrace. The disinfection station has been turned into a school.

Since the summer of 1924, vessels which are free from infection but have come from infected areas may call at Burgas.

The deratisation of vessels is carried out by means of Dutsch stoves, and passengers' personal effects are disinfected by the disinfection station of the State Hospital at Burgas, pending the completion of the port disinfection station.

The Svilengrad Quarantine Station consists of a disinfection building and five wooden huts. It was begun in 1914, but, unfortunately, owing to lack of funds, has never been finished ; it has still no permanent disinfection apparatus and no shower-baths. The buildings are very large and can accommodate several train-loads of passengers at once.

It has as yet no buildings for isolation or for administrative purposes, and no housing accommodation for the staff, latrines, drainage, or ring-fence.

The Svilengrad Quarantine Station is a very important one, not only for Bulgaria and the neighbouring countries but also for Western Europe.

The Rustchuk Quarantine Station is intended for passengers from the Lower Danube (Russia and Roumania). It has a lazaret, which is situated five kilometers to the east of the port and includes a disinfection station and a number of buildings constructed according to the specifications of the International Convention of 1903.

The lazaret was partially demolished in 1918 by the armies of occupation, and is, moreover, situated at some distance from the port, so that it is no longer adequate to meet present-day requirements. The Directorate of Public Health is contemplating the erection of another lazaret between the port of Rustchuk and the State Hospital, but owing to lack of funds it is impossible to say when this scheme will be carried out.

The Rustchuk Quarantine Station is only open at times when Russia or Roumania is declared to be an infected area.

The following table gives a survey of the work of the quarantine stations at Burgas, Varna and Rustchuk :

Year.	Quarantine Station.	Number of Vessels admitted to *pratique*.	Number of Certificates granted.	Number of Vessels coming from Infected Areas.	Number of Vessels Disinfected.	Number of Vessels cleared of Rats.	Number of Passengers coming from Infected Areas.	Number of Passengers placed under Observation.	Number of Passengers found to be Sick.	Number of Passengers found to be Carriers of Bacilli.
1921	Bourgas	1,207	293	327	56	—	627	—	1	—
	Varna	576	302	421	10	—	8,654	—	—	—
	Rustchuk.....	—	—	—	—	—	—	—	—	—
1922	Bourgas	1,475	512	836	45	1	352	—	—	—
	Varna	536	322	512	67	17	6,355	125	44	58
	Rustchuk.....	—	—	—	—	—	2,604	—	—	—
1923	Bourgas	1,159	446	559	—	—	143	—	—	—
	Varna	487	304	367	15	19	4,743	—	—	—
	Rustchuk.....	—	—	—	—	—	—	—	—	—

2. *Notification of Infectious Diseases.*

The compulsory notification of infectious diseases is one of the most important of the anti-epidemic measures, in that it allows the health authorities to take in time the necessary steps for the isolation of the patients. Unhappily, the notification regulations are not always complied with, and, despite the severity of the penalties enforced against persons guilty of neglect in this respect, a large number of cases escape the notice of the health authorities. It still happens that doctors and feldshers conceal cases of infectious diseases for fear of losing clients.

In the capital and large centres, the population is accustomed to have recourse to the doctor whenever a case of infectious disease is suspected. In the small towns and villages, on the other hand, the inhabitants frequently conceal such cases and neglect to call in a doctor for fear that isolation measures might curtail the patient's liberty and that disinfection might damage his personal effects. Health propaganda will do much to induce the population to notify all cases of infectious disease. Notification is made free of charge.

3. *Searching out of Cases of Infectious Diseases.*

Head masters and school-teachers render valuable assistance in tracing infectious diseases. They are even frequently in a position to draw attention to unknown foci. In schools which do not possess a school doctor, the school teacher is bound to question pupils every day regarding the causes of absence of their fellow-pupils. If he has grounds for suspecting that the cause of absence is an infectious disease, he makes a list of the names, christian names and addresses of the absent pupils and the nature of the disease suspected. This list is forwarded by the mayor to the district medical officer or to the communal medical officer. The mayor also forwards in writing to the feldsher of the section all information given by the school teachers. As soon as the district medical officer receives information of the existence of an infectious disease in his district, he despatches the section feldsher, who verifies the case, takes all necessary measures for isolating the patient, traces any foci of infection which may exist in the neighbourhood, prescribes the necessary health measures, and forwards a report of his visit to the district medical officer. Should the feldsher receive direct information of a case of infectious disease, it is his duty to investigate the case at once on the spot and to inform the district medical officer.

District medical officers visit all villages in which the feldshers have reported even a single case of the following infectious diseases :

Plague ;	Relapsing fever ;	Cerebro-spinal meningitis ;
Cholera ;	Enteric fever ;	Dysentery ;
Smallpox ;	Scarlet fever ;	Measles ;
Typhus ;	Diphtheria ;	

or an outbreak of whooping-cough or mumps.

The feldsher himself takes the necessary measures with regard to other notifiable diseases.

The district medical officer draws up his report in three copies on a special form. The first copy is sent to the commune, the second to the provincial medical officer and the third is filed in his archives.

A fourth copy will henceforth be despatched to the Infectious Diseases Department at the same time as the reports sent in every ten days.

The provincial medical officer visits, examines and treats patients suffering from infectious diseases, investigates the causes of the disease and its dissemination, and gives the inhabitants all necessary instructions for taking proper care of the patients and preventing the disease from spreading. It is the duty of sub-prefects and mayors to help him to enforce the application of the prescribed measures. If the disease should assume the character of an epidemic, it is the duty of the doctor to visit the village at least once a week.

In cases of infectious disease, the duties and responsibilities of the communal medical officers are the same as those of the provincial medical officers.

4. *Diagnosis of Infectious Diseases.*

It is essential that the diagnosis should be established at an early stage to allow of effective measures being taken against any infectious disease. Where the diagnosis of plague, cholera, typhus or relapsing fever is doubtful, the district medical officer must at once take the necessary steps for a bacteriological examination ; in cases of enteric fever, diphtheria and cerebro-spinal meningitis, where doubt may exist, examination by one of the State Institutes is optional.

Bacteriological and serological examinations are carried out by the State Institute of Bacteriology and the State Health Institute at Sofia, and by the communal bacteriological laboratories at Plovdiv and Choumen. Special regulations govern the taking and despatch of all matter to be examined. The Health Institute undertakes all analyses for the provinces north of the Balkans and the Institute of Bacteriology for the provinces south of the Balkans. These institutes inform the sender by telegram of the results of their analyses. Bacteriological and serological examinations are made free of charge for medical officers, but must be paid for by private practitioners unless these latter despatch the matter to be examined through the medical officer.

The State Institute of Bacteriology at Sofia was founded in 1894 and acted first of all as a centre for the production of vaccines ; an anti-rabies service was added in 1897, and since 1898 this Institute has also prepared anti-diphtheria serum. The Health Institute at Sofia was founded in 1908.

The table below shows the number of bacteriological and serological examinations carried out by the Institute of Bacteriology from 1920 to 1923 :

Years.	Widal.	Wasserm.	Weinberg.	B. Koch.	Malaria.	Other Examinations.	Total.
1920	861	450	35	21	59	207	1,633
1921	713	612	47	161	954	236	2,750
1922	754	812	64	484	608	315	3,037
1923	824	725	99	502	453	524	3,125

The Health Institute at Sofia carried out 733 bacteriological and serological examinations in 1922 and 311 in 1923.

5. *Isolation of Patients suffering from Infectious Diseases.*

It is the duty of all communal and provincial medical officers to isolate all patients suffering from infectious diseases that are compulsorily notifiable ; in the towns the police and in the country districts the communal authorities see that the instructions regarding isolation laid down by the medical officer are properly carried out. Patients may be isolated either in hospital or at their own homes.

Isolation in hospital is compulsory for the following diseases :

1. Plague ;
2. Cholera ;
3. Smallpox ;
4. Typhus ;
5. Relapsing fever.

In view of the difficulty of enforcing sufficiently stringent isolation measures to prevent the patient, his personal effects, or those around him from spreading the disease, hospital isolation is frequently made compulsory for the following diseases :

6. Enteric fever ;
7. Scarlet fever ;
8. Diphtheria.

Patients suffering from :

9. Cerebro-spinal meningitis ;
10. Dysentery ;
11. Measles ;
12. German measles ;
13. Chickenpox ;
14. Erysipelas ;
15. Mumps ;
16. Whooping-cough ;
17. Puerperal fever ;
18. Malignant pustules,

are isolated in their homes until completely convalescent and all danger of infection is over.

Persons employed in public establishments, such as hotels, inns, boarding-houses, cafés, bakeries, dairies, butchers' shops, hairdressers' shops, schools, etc., are in all cases subjected to isolation in hospital ; so are all persons dwelling in hotels, inns or boarding-houses. Should there not be sufficient room in the hospitals, the health authorities organise temporary hospitals. Isolation is enforced until all danger of spreading the infection has disappeared — that is to say :

In the case of cholera, until the pathogenic germs have disappeared from the patient's stool ;

In the case of smallpox, until the disappearance of all desquamation ; that is to say, for at least 40 days ;

In the case of typhus, from 21 to 30 days ;
In the case of cerebro-spinal meningitis, 6 weeks ;
In the case of enteric fever, 30 days ;
In the case of dysentery, 8 days ;
In the case of scarlet fever, until disappearance of all desquamation ; that is to say, for at least 40 days.
In the case of diphtheria, 15 days ;
In the case of measles, 14 days.

When the patient is isolated in his own home, persons coming into contact with the patient are forbidden to go out to their work until the sickness is over. Isolation measures are applied to the entire dwelling occupied by the patient. If the patient occupies a house of two stories, each story having two separate flats, only the flat belonging to the patient and its occupants is subjected to isolation measures. When two flats are situated on the same floor, possessing a common corridor, kitchen or closet, all the inhabitants of that floor are isolated. The persons who are isolated may not receive visitors from the outside, and their personal effects may not be taken away before they have been disinfected. The health authorities affix a notice at the entrance to every infected house stating that it is forbidden to enter the house, and the administrative authorities place a man on guard (a gendarme in the towns and a watchman in the villages), who forbids access to everybody excepting the medical staff in charge of the case. If one of the isolated persons desires to leave the infected dwelling in order to pursue his occupation or to fetch provisions for the other isolated persons, he can obtain permission from the health authorities after submitting to disinfection and to a period of observation equal to the period of incubation of the disease, but he may not return to the isolated dwelling. No permission of this kind may be given to school-children, school-teachers or priests.

In cases of measles, dysentery, whooping-cough, mumps or cerebro-spinal meningitis, children not infected may continue to attend school after a period of observation equal to the period of incubation, if they can be maintained strictly isolated from the patients.

The following are the periods of observation :

From two to seven days in the case of plague ;
Five days in the case of cholera ;
From twelve to fourteen days in the case of smallpox ;
From ten to twelve days in the case of typhus ;
From twelve to fifteen days in the case of enteric fever ;
From four to six days in the case of scarlet fever ;
From two to four days in the case of diphtheria.

Should a family become destitute on account of the isolation measures to which its members may have been subjected, the health authorities must advise the administrative authorities, who, after making enquiries, will provide for the necessary relief.

6. *Immunisation.*

Vaccination against smallpox alone is compulsory. The health service has nevertheless frequently prescribed vaccination against other diseases. The population readily accepts vaccination and, in fact, frequently asks for it. The State Institute of Bacteriology at Sofia prepares the five serums most usually employed in Bulgaria :

Anti-diphtheria ;
Anti-tetanus ;
Anti-streptococcus ;
Anti-dysentery ;
Anti-meningococcus.

The Health Institute keeps twenty horses for the preparation of the sera.

The table below shows the number of tubes and phials of sera prepared during the last four years :

	Serum	1920	1921	1922	1923
1	Anti-diphtheria	14,720	14,634	14,714	20,529
2	Anti-tetanus	6,323	6,324	8,034	10,181
3	Anti-dysentery	3,184	1,656	2,153	2,020
4	Anti-streptococcus	2,650	2,912	2,273	2,501
5	Anti-meningococcus	444	331	609	434
	Total	27,321	25,866	27,783	35,665

The Bacteriological Institute further prepares the following vaccines :

Anti-typhus ;
Anti-cholera ;
Anti-streptostaphylococcus ; and
Gonococcus serum.

It also prepares cultures from the typhus murin.

The Health Institute possesses an anti-plague section, which prepares anti-plague vaccines and serum.

Sera are distributed free of charge, except to persons of means. Of 35,665 phials distributed, only 3,648 were paid for.

The sera and vaccines prepared by the State Institute of Bacteriology at Sofia are delivered to the public by the Institute itself. Stocks are kept in the provinces by the chemists, hospitals and dispensaries. As the Drugs Act does not allow any profit to be made on the sale of these sera, the chemists sell sera and vaccines imported from abroad. Chemists and drug stores are allowed to import and sell all kinds of sera, vaccines and biological preparations subject to the approval of the General Medical Council. Each consignment is verified by the Institute of Bacteriology at Sofia, and every phial or tube must display a label indicating the name of the establishment where it was

prepared, the name of the drug, the date of its preparation and its efficacy and also the quantity of microbes it contains. Sera and vaccines more than six months old are destroyed. Further, every phial or tube not furnished with the regulation label is also destroyed.

7. *Disinfection, Disinsectisation, Deratisation.*

Disinfection has now become the object of special attention on the part of the Bulgarian health authorities. It is compulsory for the following diseases :

Plague ;
Cholera ;
Smallpox ;
Typhus ;
Relapsing fever ;
Enteric fever ;
Scarlet fever ;
Diphtheria ;
Cerebro-spinal meningitis ;
Dysentery ;
Measles.

Should the doctor in charge of the case, the patient's friends, relations or attendants, the heads of public establishments, mayors or health authorities express the wish, disinfection may also be carried out in the case of diseases notification of which is not compulsory. Disinfection is carried out during and upon the termination of the disease. It is carried out free of charge in the case of the poor, the expenses being payable by the municipality in the towns, and by the provincial councils or by the State in the villages. Persons of means, moreover, only pay for the ingredients employed in the disinfection.

The communal, district and provincial medical officers and hospital doctors are responsible for the application of disinfection measures in the case of the following diseases :

Plague ;
Cholera ;
Smallpox ;
Typhus ;
Relapsing fever ;
Enteric fever ;
Scarlet fever ;
Diphtheria ;
Cerebro-spinal meningitis ;
Dysentery ;
Measles.

In cases of German measles, chickenpox, erysipelas, puerperal fever, mumps, whooping-cough and malignant pustules, the disinfection is carried out by the persons looking after the patient under the supervision of the feldshers.

Special instructions regarding disinfection were published in 1915 by the Directorate of Public Health. Towns of over 15,000 inhabitants must possess a steam disinfecting apparatus. Towns of over 5,000 inhabitants must possess an apparatus for disinfecting by means of formol. These apparatus, which before the war years were rare, even in towns of over 15,000 inhabitants, were unknown in the smaller towns. At the present time all disinfecting appliances manufactured in Bulgaria or imported must be accompanied by a certificate from the Directorate of Public Health. The Health Institute at Sofia is responsible for verifying the working of these appliances. No apparatus may be used before it has been examined. At the end of 1923, the Directorate of Public Health had at its disposal 202 steam disinfecting apparatus, of which 178 were portable and 24 fixed installations.

Of the portable apparatus, 88 were in good condition and 62 needed repair. Of the fixed installations, 12 were in good condition and 12 needed repair. Two squads of expert mechanics are available for carrying out repairs on the spot.

The State possesses only 17 disinfection stations, of which three are attached to the frontier health stations, 12 to the first-class hospitals and two to the second-class hospitals. A few communes also possess disinfection stations.

There is still a lack of experienced disinfecting staff. It is composed at present of a few disinfectors, who were employed during the last war, and for the rest of persons who possess no technical knowledge and have no experience in the handling of the complicated steam plants.

Special compensation is provided for effects damaged by disinfection. Damages are estimated by a Commission composed of representatives of the financial services, the health authorities and communes. The State pays compensation for effects damaged by the frontier health stations ; the communes pay compensation for effects damaged by urban disinfecting installations, and in the case of those damaged by the rural disinfecting apparatus the cost of compensation is shared equally by the provincial councils and the communal funds.

8. *Anti-epidemic Staff.*

Each sanitary province possesses a squad composed of a doctor and a technical expert, with one or more assistants for the operation of the disinfecting plants. The Directorate of Public Health has at its disposal an anti-epidemic staff for the application of measures against plague, cholera and infectious diseases of an epidemic nature. This staff is composed of a doctor specialising in epidemiology, a bacteriologist and a specialist in internal diseases, several "feldschers", a technical expert for disinfection, a treasurer and a certain number of subordinate employees. With the exception of the chief official, whose appointment is subject to a special decision, the whole of this staff is recruited, in case of necessity, from amongst the staffs of the institutes or hospitals. The anti-epidemic squads take measures to trace and isolate the patients, place suspected cases under observation, take charge of cases, issue instructions and advice to the population, give preventive vaccination and carry out disinfection during and at the termination of the disease. Each squad possesses all material necessary for organising the anti-epidemic campaign on the spot. Where one squad is not sufficient for the needs of a province, the Directorate of Public Health despatches one or more squads from the neighbouring provinces. In 1923, the Directorate of Public Health had at its disposal ten sanitary squads and two provinces possessed their own squads. The results obtained by these anti-epidemic squads were most satisfactory.

9. *Burial Regulations.*

No burial can take place without the permission of the health authorities, which are responsible for verifying the causes of death. When death is due to an infectious disease, access to the death chamber is forbidden, except to the near relatives of the deceased, and transport of the body to the churches is also prohibited. The funeral service is held in the cemetery. The transport of the body from the death chamber to the cemetery is

effected in a closed coffin after due disinfection. Transport of the body from one commune to another is only permitted if the body is placed in a hermetically sealed metal coffin. If death was not due to an infectious disease, the body is transported in a metal coffin after previous disinfection. The body must be wrapped in a sheet dipped in a liquid disinfectant and placed in a hermetically sealed coffin for transport from one district to another within a province. Embalming is compulsory for the transport of a corpse from one province to another or beyond the frontiers of Bulgaria and, moreover, a hermetically sealed coffin of lead or zinc enclosed in wood is essential.

A body may not be sent from one province to another or beyond the frontiers of Bulgaria without a passport issued by the sub-prefect or mayor upon previous notice from the provincial medical officer. Burial must take place in a cemetery, except in the cases of ecclesiastics or lay persons to whom their country may desire to pay special honour and who may therefore be buried in the churches, mosques and synagogues. Cemeteries must be situated at least 500 meters from the town and 200 meters from the villages, surrounded by a wall and planted with trees. Graves must be 2 meters long by 80 centimeters wide by 1.50 meter deep. The distance between two graves must be 50 centimeters laterally and 60 centimeters lengthways. Grave concessions cover a period of ten years. Exhumation and transport of dead bodies is subject to the permission of the General Medical Council. Such authority is only given after three years if death was due to an infectious disease. Exhumations are governed by special regulations and come under the control of the local health authorities.

II. Campaign against Specific Infectious Diseases.

1. *Plague.*

Plague was unknown in Bulgaria until January 26th, 1924, when two cases — imported by a ship from Syria — were reported at Varna. Thanks to energetic prophylactic measures, the disease did not spread. Prophylaxis against plague is organised on the sea frontiers in accordance with the provisions of the Paris International Convention of 1912. Special measures are taken by the sanitary service on the land frontiers in case of a threat of plague. The prophylactic measures include :

Destruction of rats in the ships and in the ports ;
Isolation of plague patients in hospital ;
Preventive vaccination of the staff of the quarantine stations and of the railways.

In case of a threat of plague, the campaign for the destruction of rats is carried on throughout the country.

2. *Cholera.*

Situated between Russia and Turkey, Bulgaria is constantly threatened with cholera. In 1896, for example, a few cases of cholera were reported at the quarantine station of Toutrakan amongst the Bulgarian agricultural labourers who migrate to Southern Russia in spring and return to Bulgaria in the autumn. In 1910, after the Turkish manœuvres at Adrianople, the soldiers from Anatolia brought cholera with them into Eastern Thrace

and into Macedonia, where it spread amongst the civil population. Three cases were reported at that time at Varna and two at Tatar-Pazardjik. In 1911, 32 sporadic cases, 18 of which were fatal, were notified in several towns in Bulgaria. In 1912, the Bulgarian Army, which was in pursuit of the Turkish Army, was held up at Tchataldja by cholera, which was raging in a violent form amongst the Turks. New cases of cholera were reported in 1913, brought by the Turkish prisoners and disbanded Bulgarian soldiers. Happily the disease did not spread. An extraordinarily violent outbreak of cholera occurred amongst the Roumanian Army of Occupation in Bulgaria. After the departure of this Army and the return of the Bulgarian Army, which had also come in contact with this disease in Macedonia, an epidemic affecting several thousands of people broke out in the country.

During the war the retreating Russian Army carried cholera to the Dobrudja. Many cases were reported amongst the Bulgarian soldiers occupying the district and amongst the civilian population. Thanks to the energetic measures taken (rapid tracing of the early cases and vaccination of the Bulgarian Army), the disease did not become epidemic. During October, November and December 1916, the field hospitals in the Dobrudja treated 8,456 cholera cases, of which 116 were fatal. There have been no cases of cholera in Bulgaria since 1916.

The prophylactic measures adopted against this disease are in accordance with the provisions of the International Sanitary Convention of 1912. Further, all suspected cases are notified, isolated in hospital and submitted to a bacteriological examination ; all persons coming into contact with the patients are vaccinated.

3. *Smallpox.*

Owing to the introduction of compulsory vaccination, this disease has become very rare in Bulgaria A few local outbreaks have been reported during and since the great war :

8,746	cases in 1919	24	cases in 1922
527	„ „ 1920	20	„ „ 1923
22	„ „ 1921		

During the last few years, moreover, the cases reported occurred mainly amongst the refugees and the Turkish population, many of whom succeed in evading vaccination.

Anti-smallpox vaccination was introduced into Bulgaria in 1845 by Sultan Mahmud. Human serum was employed under Turkish rule.

At the present time, all children are vaccinated before they attain the age of one year. The first re-vaccination takes place before the age of seven and the second before the age of 20. During an outbreak, vaccination is compulsory for everybody who has not been vaccinated within the previous three years, with the exception of those who have already had the disease or who are over 45 years of age. Vaccination is carried out by doctors, " feldschers " and midwives.

A certificate is handed by the vaccinator to everybody who has been successfully vaccinated or re-vaccinated. The presentation of this certificate is compulsory for all pupils who wish to attend school. During their tours of inspection, provincial medical officers verify the application of the vaccination regulations.

The vaccine is prepared by the State Institute of Bacteriology at Sofia. The table below gives a summary of the vaccinations carried out during the years 1920 to 1923 :

Years.	Vaccinations.			Re-vaccinations.			Number of Tubes prepared.
	Number of Persons Vaccinated.	Positive Results.		Number of Persons Vaccinated.	Positive Results.		
		Number.	%		Number.	%	
1920	123,036	111,548	93.31	151,995	80,712	63.0	27,739
1921	93,962	93,962	92.5	60,897	35,748	45.0	23,553
1922	128,649	113,119	86.9	89,035	54,577	61.0	20,863
1923	55,451	51,622	93.9	42,951	24,473	56.0	19,972

All persons living in a house where a case of smallpox has been reported or in its immediate neighbourhood must be vaccinated or re-vaccinated. If amongst such persons there is a pupil attending school, all the pupils of that school must be vaccinated or re-vaccinated.

4. *Typhus.*

Typhus was imported into Bulgaria at the beginning of the war by the Serbian prisoners from Macedonia released in Bulgaria by the Austrians, and has been reported in all the districts inhabited by these prisoners. One hundred and thirty-four cases were notified, of which 38 were fatal.

After the entry of Bulgaria into the war a fresh outbreak occurred, again imported by the Serbian prisoners. The Greeks who were interned also introduced this disease into certain districts in Bulgaria after the occupation of Macedonia, where it was raging, The Roumanian and Russian prisoners also helped to spread it in Bulgaria.

The table below shows the mortality, case fatality and morbidity of typhus between 1914 and 1923 :

Years.	Morbidity.		Mortality.		Case Fatality per 100 Cases.
	Number.	Rate per 10,000 Inhabitants	Number.	Rate per 10,000 Inhabitants.	
1914	134	0.276	38	0.078	28.3
1915	371	0.753	34	0.069	9.16
1916	670	1.339	89	0.178	13.30
1917	6,697	13.320	764	1.519	11.41
1918	4,276	8.381	520	1.012	12.15
1919	5,671	11.340	726	1.450	13.42
1920	3,185	6.601	376	0.781	12.86
1921	874	1.790	99	0.210	11.51
1922	488	0.980	68	0.140	14.68
1923	413	0.832	51	0.103	12.83
Average	2,277	4.74	277	0.56	13.96

5. *Relapsing Fever.*

Relapsing fever was reported in Thrace in 1912 and at Boulaïr in 1913, and appeared amongst the population of Nevrokop in 1914. Serbian soldiers from Macedonia, disbanded in Bulgaria by the Austrians at the beginning of the war, brought relapsing fever with them (410 cases). The disease was reported amongst the prisoners and later amongst the Russian refugees settled in Bulgaria. The measures enforced against typhus and relapsing fever are isolation in hospital and disinsectisation of the patients. All persons who have been in contact with the patients are subjected to the same measures and placed under observation for three weeks in the case of typhus and two weeks in the case of relapsing fever. Disinsectisation is repeated every five days during the period of observation. When the disease becomes epidemic, disinsectisation of the whole population and of all dwellings is ordered.

6. *Enteric Fever.*

The table below gives a summary of the spread of enteric fever in Bulgaria :

Years.	Number of Cases reported.	Rate per 10,000 Inhabitants.	Number of Deaths.	Rate per 10,000 Inhabitants.	Case Fatality per 100 Cases
1919	4,192	8.39	541	1.09	12.89
1920	3,080	6.38	321	0.68	10.42
1921	1,915	3.93	222	0.46	11.59
1922	2,867	5.77	301	0.61	10.84
1923	2,799	5.63	326	0.66	11.64
Average.....	2,971	6.04	342	0.69	11.5

The provinces of Plevna, Rustchuk, Trnova and Sofia have been most seriously affected by enteric fever between 1919 and 1923. This disease increases regularly in intensity in autumn, when the heavy rains wash fæcal matter into the rivers. The water in the springs, pipes, wells and rivers thus becomes contaminated. The water in the wells is frequently contaminated by the vessels brought by the inhabitants from their homes to lower into the wells. The habit of washing the linen and clothes of patients near the wells, springs and fountains is also a frequent cause of the contamination of water. Milk is often contaminated by the water which the peasants add to it on the way. Natural ice, which often comes from contaminated rivers, is also a source of infection.

Enteric fever occurs frequently in the poorer districts. The lack of education in matters of health, the fact that the inhabitants do not wash their hands before meals and that they still often eat by dipping their fingers into the dish, together with swarms of flies, help to spread the disease.

Patients are isolated in the hospitals or in their homes.

The use of every suspected spring is forbidden until it has been submitted to a bacteriological examination. If the examination yields a positive result, disinfection is applied and the whole population of the district is vaccinated. Disinfection continues until the disease has disappeared.

7. *Scarlet Fever.*

Scarlet fever is widespread in Bulgaria. The following table shows the morbidity, mortality and case fatality per 100 cases between 1905 and 1925 :

Years.	Morbidity.		Mortality.		Case Fatality (per 100 Cases).
	Number.	Rate per 10,000 Inhabitants.	Number.	Rate per 10,000 Inhabitants.	
1906	2,171	5.24	415	1.01	19.19
1907	6,355	15.41	1,160	2.82	18.25
1908	5,474	13.08	1,055	2.53	19.27
1909	5,093	12.02	1,060	2.50	20.81
1910	4,799	11.14	931	2.16	19.36
1911	2,130	4.88	362	0.83	16.99
1912	1,624	3.66	256	0.58	15.76
1913	2,720	6.05	493	1.09	18.12
1914	6,923	14.26	1,235	2.55	17.85
1915	3,440	6.98	577	1.17	16.77
1916	4,092	8.18	699	1.40	17.08
1917	5,131	10.21	903	1.80	17.60
1918	2,435	4.79	519	1.02	21.31
1919	3,113	6.23	552	1.10	14.49
1920	4,398	9.11	760	1.58	18.76
1921	6,062	12.45	1,184	2.43	19.53
1922	7,196	14.49	1,211	2.45	16.98
1923	15,585	31.40	2,935	5.91	18.68

Between 1906 and 1922 the average number of cases was 4,930 per annum. During certain years scarlet fever became epidemic ; for example :

In 1907, 6,355 cases were reported (15.4 per thousand) ;
In 1914, 6,923 „ „ „ (14.26 „ „) ;
In 1923, 15,585 „ „ „ (31.4 „ „).

The yearly average of deaths due to scarlet fever during those years was 869.

In 1923, the mortality due to scarlet fever was 2.08 times greater than in 1922. This disease increases as autumn approaches and decreases in spring ; it rarely occurs during the summer months.

The following table shows the monthly distribution of the incidence of scarlet fever during the last three years :

Years.	Months.												Total
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
1921	425	393	421	288	366	340	288	330	544	809	1,070	848	6,062
1922	590	333	290	204	248	251	337	507	810	1,197	1,297	1,117	7,196
1923 cases	750	661	593	521	700	648	821	1,096	1,954	2,403	3,115	2,323	15,585
1923 ‰	1.51	1.33	1.19	1.00	1.41	1.30	1.65	2.20	3.93	4.84	6.28	4.68	31.40

The high case fatality of scarlet fever is explained by the fact that it was impossible to isolate the patients or secure proper treatment for them and also by the ignorance of the rural population. In 1923, scarlet fever was prevalent in a more severe form in the country districts than in the towns ; one case amongst the children in a school was sufficient for the infection to spread to all the children in the village. Although scarlet fever principally attacks children, adults were by no means immune.

The misery which ensued after the war, the insufficient food and the lack of proper housing created favourable conditions for the development of infectious diseases.

8. *Measles.*

Measles is one of the most widespread diseases. It occurs generally in a mild form, but severe cases have nevertheless been reported.

9. *Diphtheria.*

Diphtheria is very prevalent and is considered the most fatal disease. It has been reduced to a great extent since the introduction of anti-diphtheria serum and it can now be considered a sporadic disease. It is most prevalent in the month of December.

10. *Influenza.*

Influenza assumed at the end of the war the character of a real pandemic and has continued to claim a number of victims for several years. In 1921, 20,896 cases were reported, of which 258 were fatal.

11. *Rabies.*

Rabies, a disease which is endemic in Bulgaria amongst domestic and wild animals, assumed the character of an epizootic after the war. The number of persons bitten increases every year. The annual average number of deaths from rabies is between 15 and 20. The following table shows the number of cases treated by the anti-rabies section of the State Institute of Bacteriology at Sofia during the years 1920, 1921, 1922 and 1923.

Bitten by:	1920	1921	1922	1923
Dogs	1,027	1,788	2,481	3,178
Cats	18	30	100	101
Wolves	15	10	25	3
Human beings	—	—	2	14
Horses	14	6	13	27
Mules	—	—	5	3
Donkeys	17	7	32	16
Rabbits	—	—	1	—
Oxen and buffaloes	—	—	43	41
Calves	3	109	—	—
Foxes	—	—	1	1
Ewes	—	—	1	7
Pigs	18	66	26	36
Goats	—	—	6	2
Total	1,112	2,016	2,736	3,429

In 1923, 1,600 peasants and 1,829 urban dwellers were bitten by animals suffering from rabies. It is estimated that this disease caused the country a loss of 15,000,000 levas in 1923 alone.

The organisation of the campaign against rabies has been entrusted to the Veterinary Service of the Ministry of Agriculture. As soon as a zone has been declared infected or suspect, the muzzling of all dogs becomes compulsory. They must be kept on the chain at home and are only allowed in the streets on a lead. All rabid animals, or animals which have come into contact with rabid animals, are killed ; suspect herbivorous animals are placed under observation for three months. Persons infected or suspected of being infected are sent to the State Institute of Bacteriology at Sofia, which is the only anti-rabies institute in the country.

Moreover, efforts are being made to reduce the number of dogs by making it compulsory for every dog to wear a collar and medal, by heavy taxes on luxury dogs and by killing all stray dogs.

III. Preventive Measures against Infectious Diseases in Schools.

School-teachers are obliged to examine their pupils ; any pupil who is suffering from an infectious disease is immediately sent away from school, as also his brothers and sisters, should the school doctor consider it necessary. The school-teacher notifies the local health authorities, who disinfect the school. Any pupil who has a high temperature is sent home or, if he lives at the school, is isolated. Every boarding school must have one or more isolation wards. When a pupil is sent away from school on account of sickness, the head master warns his parents of the danger of infection and indicates what

prophylactic measures should be taken. A pupil returning to school after convalescence must submit a medical certificate stating that he has kept his room for a week after the disappearance of every symptom of disease. If the infectious disease takes on an epidemic or malignant form, the local health council, on the initiative of the head master or school doctor, orders the school to be closed, and a sheet of instructions stating the prophylactic measures to be taken is distributed to all the parents.

In cases of smallpox, scarlet fever or measles, the pupil is forbidden to attend the school for 40 days in the case of a first or second infection, and for 16 days in the case of a third infection; the school books and copy-books are destroyed and a rigorous disinfection carried out. The boarders or staff attached to the school are treated at the school if the isolation conditions are adequate and if the school doctor gives his permission.

The following are the preventive measures in force in schools :

A supply of pure water, filtered or boiled, is provided ;

The closets are constructed at a distance from the school-rooms and from the wells ;

The school-rooms are cleaned without raising the dust ;

The floor is disinfected once a week and the walls are lime-washed twice a year.

IV. Preventive Measures against Infectious Diseases on the Railways.

Despite the importance of this question, the only steps which have so far been taken have been in respect of plague and cholera. The railways are forbidden to carry patients suffering from plague or cholera.

Patients suffering from smallpox, leprosy, typhus, cerebro-spinal meningitis, enteric fever, scarlet fever and diphtheria must be carried in a special carriage ; patients suffering from dysentery, measles and whooping-cough must travel in a special compartment with a reserved water-closet. Railway officials are obliged to remove from the train at the first possible station any passenger who is visibly suffering from an infectious disease. In case of doubt, the patient must get out at the first station possessing a railway doctor, with whom all further decisions will lie. Railway carriages in which patients suffering from infectious diseases have travelled are sealed directly the patients have left them and are disinfected.

V. Measures against Epizootic Diseases.

The application of preventive measures against epizootic diseases is entrusted to the Veterinary Service attached to the Ministry of Agriculture and State Lands. The Veterinary Service is conducted by the Veterinary Section of the Ministry of Agriculture and by the General Veterinary Council.

The Veterinary Section makes every effort to keep the country free from epizootic diseases and to improve stock-raising conditions. It supervises all animal food products, controls the slaughter-houses, the knackers' yards and the cold-storage installations and is responsible for the sanitary inspection of the market-places and cattle fairs.

The Veterinary Section is composed as follows :

A Chief of Section, assisted by an assistant chief and several veterinary surgeons ;
A technical engineer at the head of the cold-storage service ; and
Auxiliary staff.

The General Veterinary Council is a scientific and advisory body.

The provincial veterinary services include :

16 provincial veterinary surgeons ;
62 district veterinary surgeons ;
3 frontier veterinary surgeons ;
3 railway veterinary surgeons ;
12 sectional veterinary surgeons ;
310 sectional "feldschers" ;
21 communal veterinary surgeons ;
22 communal "feldschers".

The veterinary surgeons usually study at universities in France, Germany, Italy, Russia or Austria.

The "feldschers" attend a special veterinary college.

Each department possesses institutions (hospitals and dispensaries) for the treatment of domestic animals. These institutions come under the budgets of the provincial councils, a section of which provides for their construction and maintenance.

The Veterinary Section possesses a Veterinary Bacteriological Institute, suitably equipped for bacteriological examinations and research work. This Institute produces all the vaccines and sera necessary for diagnosis and for the treatment of animals. Special measures are laid down for the following diseases :

Bovine plague *(Rinderpest)* ;
Contagious bovine pleuro-pneumonia ;
Contagious goats' pleuro-pneumonia ;
Bacterioid carbuncle ;
Infectious emphysema ;
Ovine smallpox ;
Glanders ;
Dourine ;
Swine fever ;
Swine erysipelas ;
Rabies ;
Aphthosa ;
Tuberculosis ;
Scabies ;
Pyroplasmosis ;
Chicken cholera and plague.

The most prevalent infectious diseases amongst live-stock in Bulgaria are :

Ovine smallpox ;
Swine fever ;
Anthrax ;
Glanders ;
Dourine ;
Infectious angina ;
Infectious pneumo-enteritis.

The importation of animals and of animal food products is permitted only through certain stations fixed by the Ministry of Agriculture, and is subject to supervision.

The transport of animals and of animal food products in the interior of the country can only take place with the permission of the veterinary authorities, who deliver a waybill.

The following measures are laid down against epizootics :

Sero-vaccination and vaccination ;
Isolation ;
Quarantine ;
Confiscation ;
The slaughter of diseased animals.

The Veterinary Section has an "epizootic fund" at its disposal to cover the expenses of measures against epizootics and to compensate the owners of slaughtered animals.

Every commune of over 3,000 inhabitants must possess a slaughter-house, which is placed under the supervision of the local veterinary inspector. Private slaughter-houses are forbidden.

Markets and fairs are subject to the authority of the Ministry of Commerce and Industry.

PREVENTIVE MEDICINE.

I. Urban and Rural Hygiene.

The present resources of the country are not sufficient to allow of active steps being taken to eliminate factors favourable to the spread of infectious disease, or to improve hygienic conditions in the more populous areas. The Ministry of Public Works is the department responsible for hygienic improvements, and in this respect it acts in concert with the Ministry of the Interior and Public Health. The Ministry of Public Works prepares schemes for town-planning, rectification of street frontages, paving, town water-supplies, drainage works and construction of sewers, conservancy of water courses, construction of slaughter-houses, etc.

The cost of municipal improvements is borne by the communes, but the latter frequently receive grants from the State.

Improvement works in villages are carried out by the rural communes at their own expense ; they receive grants from the provincial councils. The State makes special grants for supplying villages with water.

1. *Water-supply.*

Work in connection with water-supplies is carried out by the communes at their own expense. All questions concerning the construction of conduits must be examined on the spot by representatives of the Institute of Hygiene and discussed by the provincial health council. The decisions of the provincial health councils are submitted for approval to the General Medical Council. The Ministry of Public Works then authorises the execution of the work. Private water-conduits are not allowed in the towns.

Water in the villages is also provided by co-operative effort. Every province possesses a special fund for providing villages with water ; this fund is constituted by contributions

om the State, the provinces and the communes, the latter contributing two per cent of heir budgetary income.

Credits for providing villages with water are voted by the provincial councils one ear in advance, and the budget is submitted for approval to the Ministry of Public Vorks.

In 1911, in Bulgaria, only seven towns and three villages had modern water-supply nstallations ; in 1923, 13 towns and 99 villages were equipped with modern plant. The quantity of water available in populous centres is everywhere inadequate. Centres vhich have no up-to-date equipment utilise water drawn from rivers, springs and wells. The springs are generally close to the surface and are canalised by very primitive means : he water is either drawn at the source or carried away through wooden, earthenware or, nore rarely, metal pipes. Centres which have no water-conduits use well-water ; the wells are of very primitive construction and are exposed to every form of pollution. They are in many cases sunk in the immediate vicinity of water-closets or cemeteries, and are not covered from rain-water and melting snow.

Loans contracted before the war by many towns and villages for the purpose of improving their water-supply were spent, during the war, on more urgent needs.

2. *Sewerage and Canalisation in the Towns.*

The communes are responsible for the work of canalisation and the construction and upkeep of sewers. In towns which possess a sewerage system, owners are bound to construct at their own expense sewers connecting their dwellings with the nearest main sewer.

In the villages many houses possess no water-closets, and excrement is deposited in the open fields.

Many towns have not altered the sewerage system which existed under Turkish rule : each quarter or group of houses has a sewer which flows into a river or stream and houses not connected with one of these sewers have cesspools. In some towns the cesspools are periodically cleaned out by nightmen, while in others the emptying and cleaning of cesspools is left to private initiative. The nightsoil is emptied into ditches or spread over the fields.

Only the towns of Sofia, Varna, Philippopolis, Rustchuk and Burgas possess a modern sewerage system, but as these towns have grown very rapidly only the central quarters are canalised. The Sofia system is of the "main sewer" type. In quarters which have not yet been provided with sewers, the municipality has organised a special service for cleaning out cesspools with vacuum apparatus.

3. *Collection of Refuse.*

Only seven towns have a regular service for the collection of refuse. In other towns this is left to the individual.

4. *Road-sweeping.*

As regards cleanliness, the streets, squares and market-places leave much to be desired ; only a few towns possess a regular street-sweeping service.

In small towns and villages, each person sweeps before his own house. Since, moreover, only the principal streets are paved, there is much dust in summer, and in winter the streets are almost impassable on account of the mud. Certain towns water the main streets in very hot periods.

II. Sanitary Improvement Works.

The Law on the Prevention of Malaria provides for :

(a) Major sanitary improvement works in marshy areas, the draining of lakes and swamps, the correction of water-courses, and the construction of dikes ;

(b) Minor sanitary improvement works, the drying-up of pools near wells and fountains, the filling-up of hollows in which pools form, the correction of small water-courses and small dikes in the rice-fields, market-gardens, etc.

As the larvæ of mosquitoes cannot live in water of a salinity of over 2° B, lakes and marshes are treated with salt water introduced through canals. The main works of major sanitary improvement carried out by the Directorate of Public Health are the construction of the Ghebedje Canal, the salting of the Athanasskeui lake, and the draining of the Jakeshi and Turkmen lakes.

III. Domestic Sanitation.

No building may be constructed without the permission of the competent authorities. Plans for the construction of all public buildings must be approved by the Ministry of Public Works. The sanitary authorities examine these plans from a hygienic point of view. All plans for the construction of hospital buildings — whether State, provincial, municipal or private — must be approved by the General Medical Council before the Ministry of Public Works authorises their construction. Plans for slaughter-houses, permanent markets, bathing establishments, schools and factories must be approved by the provincial health councils.

The Public Welfare Act defines the conditions which must be fulfilled in the case of public buildings. Rooms must be at least 2½ meters high ; the floors of premises to be used as dwellings or workshops must not be below the level of the street pavement.

There are few ordinary bathing establishments in Bulgaria, although many towns possess Turkish baths. The increase in the price of fuel has made baths so costly that at the present time, for most of the population, they are a luxury.

The housing shortage is a post-war phenomenon, though Sofia has been suffering from it for 15 years. The number of houses in Bulgaria was steadily growing in proportion to the growth of the population until the war broke out.

In 1900, in the whole of Bulgaria, there were 472,716 dwellings, while in 1910 there were 758,342.

The number of dwellings therefore increased by 60 per cent, while the population was increasing by 16 per cent. In 1900, there were 18 dwellings per 100 inhabitants ; in 1920, there were 17.5.

After the war, the shortage of houses became noticeable in the more populous centres — Sofia, Philippopolis, Rustchuk, Haskovo, etc.

In 1910, Sofia possessed 112 dwellings per 1,000 inhabitants, and in 1920, 102 per 1,000.

The corresponding figures for the other towns are :

Philippopolis, in 1910 : 173 dwellings per 1,000 inhabitants.
1920 : 154 ,, ,, ,,
Rustchuk, in 1910 : 187 ,, ,, ,,
1920 : 184 ,, ,, ,,

In the other towns the average is :

1910 : 193 dwellings per 1,000 inhabitants.
1920 : 184 ,, ,, ,,

The shortage is particularly acute at Sofia and Philippopolis.

At Sofia, in 1920, there was an average population of 2.1 per room.
At Philippopolis ,, ,, ,, ,, 1.97 ,,
At Varna ,, ,, ,, ,, 1.84 ,,
At Rustchuk ,, ,, ,, ,, 1.53 ,,

In order to meet the shortage, several communes have offered land free for the construction of small houses ; these sites, situated outside the main centres of population, possess neither sewerage systems nor adequate water supplies, and are much subject to infectious diseases.

In the big towns, large apartment-houses have also been constructed, but the apartments are in almost every case immediately monopolised by banks, hotels, shops and offices.

From 1921 to 1923, 4,026 apartment-houses were constructed at Sofia, bringing the number of houses up to 19,962 for a population of 183,200. The average annual increase in the number of houses is 7.8 per cent.

In order to reduce the shortage, two lines of action have been followed :

1. A maximum scale of rents has been fixed and relations between landlords and tenants have been regulated by special legislation. The law accords special protection to State, provincial and communal employees and to poor persons.

2. Efforts have been made to encourage building.

The law stipulates that rents may not be more than eight times 1915 rentals. This restriction, which will terminate on April 1st, 1926, does not apply to houses under construction, the rental of which is subject to no maximum rule. These buildings will also be exempt from taxation until 1930.

A grant of 70,000,000 levas has been made by the State to the communes to encourage building.

It must be admitted that all steps hitherto taken to meet the housing shortage are merely palliatives. The numerous co-operative building societies which exist in Bulgaria find their activities paralysed by lack of funds, and the financial situation of the State is such that the only remedy would seem to be to attract foreign capital and resort to loans on a very large scale.

Although no house may be built unless its plans have been approved by the engineers of the public services, houses of recent construction are still far from hygienic. The rooms are small and dark. The peasants' houses, with their large projecting roofs, small windows and beaten-earth floors, are still more unhealthy. They generally consist of a single room, situated next the stable and so badly protected from it that the air is polluted. Some slight progress, however, has been noticeable in recent years. The peasants' houses are somewhat larger and conditions are slightly more sanitary.

IV. Inspection of Foodstuffs.

The high cost of living having rendered the manufacture of foodstuffs profitable, this industry has developed enormously since the war ; but there has also been an incredible increase in the number of counterfeit or adulterated products. Nearly all essential articles of food are affected.

The veterinary authorities are responsible for the inspection of foodstuffs of animal origin, and the sanitary authorities for all other foodstuffs.

Two seals are affixed to all samples taken for inspection, the first by the sanitary authorities and the second by the dealer. The samples are then despatched, with a report, to the nearest analytical laboratory. A second sample is kept in case the dealer appeals against the decision of the laboratory. Should analysis show that the foodstuffs examined are harmful or imitations, a report on the analysis is sent by the laboratory to the sanitary authorities, who take proceedings against the offender. All foodstuffs found to be harmful are destroyed.

The staff engaged in analysing foodstuffs must hold certificates proving that they have studied chemistry and are acquainted with research methods. Foodstuffs are analysed at the State Institute of Chemistry, the State Institute of Hygiene at Sofia, and the departmental and municipal laboratories at Sofia, Plevna, Varna, Rustchuk and Vidin. There are very few chemical laboratories in Bulgaria.

The Institute of Chemistry attached to the Directorate of Public Health at Sofia, which was founded in 1880 to analyse pharmaceutical products, is at present actively engaged in analysing foodstuffs. The following table shows the work it has accomplished from 1909 to 1923 :

Foodstuffs.				Forensic Research.	Chemical Analyses.	Analyses of Fish Oils.	Analyses of Urine.	Total Number of Analyses.	Number of private Analyses.	Income in Levas.
Year.	Home Produce.	Imported.	Total:							
1909	568	942	1,510	67	245	68	40	1,930	19	—
1910	379	878	1,257	72	98	74	20	1,521	43	—
1911[1]	411	715	1,126	99	331	80	—	1,636	17	—
1914	1,865	—	—	92	—	170	—	262	—	—
1919	256	181	437	70	272	—	77	856	188	—
1920	131	55	186	78	205	—	80	549	74	14,345
1921	182	35	217	72	504	—	88	871	114	15,000
1922	526	95	621	82	382	61	114	1,260	147	34,355
1923	1,054	600	1,654	123	748	44	85	2,654	96	71,040

(1) The institute of Chemistry was closed during the years 1912, 1913, 1915, 1916, 1917 and 1918.

The State Institute of Chemistry at Sofia is directed by a chemist with a number of assistants, including a pharmaceutical chemist.

The State Institute of Chemistry is making investigations with a view to determining the standard which food and drink should attain to be fit for consumption. The work is long and difficult, on account of the scarcity of specialists.

Imports of foodstuffs assumed such proportions before the war that the General Medical Council found itself obliged to call upon the Customs chemical laboratories to examine all imported foodstuffs. The Customs chemists, already overburdened with work, are unable to devote as much care as could be desired to this additional task, and a certain quantity of low-quality foodstuffs still finds its way into the market.

The inspection of foodstuffs of animal origin is carried out by the communal veterinary surgeons, the communal veterinary " feldschers " or, failing these, the district veterinary surgeons. These officials are under the veterinary section of the Ministry of Agriculture.

Meat for human consumption is examined by the veterinary authorities or, if there are none, by the communal authorities. The animals are examined the day before slaughtering, and those found to be suffering from anthrax, rabies, ovidian smallpox, bovine pleuro-pneumonia, cattle-plague or other infectious diseases may not be killed at the slaughter-house. All meat found to be unfit for consumption is confiscated and meat of inferior quality is sold as such. Foodstuffs of animal origin are subject to the supervision of the veterinary surgeons throughout every stage of their preparation, as are also the premises on which they are prepared. Persons employed in this work are under the supervision of the health service. No butcher's shop, milkshop, fishmonger's business or factory for the preparation of foodstuffs of animal origin may be opened or established without a permit issued by the municipality after consultation with the municipal veterinary surgeon.

All towns are obliged to build permanent markets for the sale of foodstuffs of animal origin. Counterfeit or harmful foodstuffs are destroyed or rendered unfit for consumption. Every commune of over 20,000 inhabitants must possess a laboratory for the testing of these foodstuffs.

The veterinary authorities inspect milch animals and the sanitary condition of stables. Every cattle-owner who desires to carry on a milk business must obtain permission from the commune ; permission is granted after the live-stock, stables, etc., have been inspected. Milch animals are tuberculinised at least once a year, and animals found to be tuberculous are slaughtered.

Foodstuffs of animal origin may only be imported through certain frontier stations where there is a veterinary surgeon.

The veterinary authorities send in reports on all offences against the foodstuffs regulations to the district veterinary officer, who determines the amount of the fine. If the offence is such as to call for imprisonment, he sends the report to the criminal court.

V. Health Propaganda.

The intellectual level of the people is not yet very high ; they are beset with superstitions and prejudices, and their habits contribute greatly to the propagation of infectious diseases. Their hygienic education has yet to be begun. A large part of the population is incapable of understanding the reasons for the rules laid down by the health authorities, and consequently does not realise that it must sometimes sacrifice a little of its personal liberty in the cause of health. This state of affairs seriously hinders the campaign against infectious disease and doctors' advice is often disregarded. A certain amount of health propaganda work has already been accomplished, but in an irregular manner without any definite plan, because no proper organisation exists to undertake the campaign. The teaching of hygiene is compulsory in Bulgaria in the primary and secondary schools and in the high schools. This instruction is carried a step further in the teachers' training colleges.

Many doctors give lectures on infectious diseases, tuberculosis, alcoholism, etc. These are very well attended, although the lecturers unfortunately possess no magic-lantern or cinematograph apparatus to bring their points home graphically to the population.

The University of Sofia organises popular scientific lectures and possesses films and magic lanterns.

During the last two years the railway sanitary service has organised a course of lectures at Sofia for railwaymen and their families.

The Directorate of Public Health and the other health services of the country publish propaganda pamphlets. Before the war there existed a number of popular health journals with a very wide circulation, but unfortunately the increased cost of printing has greatly diminished their number.

The Directorate of Public Health endeavoured to establish a health museum in the State Institute of Hygiene at Sofia, but was forced to close it owing to lack of funds.

CAMPAIGN AGAINST SOCIAL DISEASES.

Owing to her deplorable financial situation, Bulgaria has not yet been able to organise a systematic campaign against social diseases. The Public Health Protection Act which is now in preparation lays down that curative treatment shall be provided at the expense of the provinces and communes as heretofore, but that the State shall take over preventive hygiene and the campaign against social diseases.

1. *Tuberculosis.*

As tuberculosis is not classified as a notifiable disease, no information is available regarding its incidence in Bulgaria.

The Directorate of Public Health, however, has collected information regarding tuberculosis mortality from 1900 to 1922 in 50 of the 54 towns of Bulgaria having a population of over 5,000. We may quote the following figures :

	Per thousand.
1905 : mortality from tuberculosis	3.5
1913 : „ „ „	2.4
1914 : „ „ „	2.8
1916 } „ „ „	2.9
1917 }	
1918 : „ „ „	3
1919 : „ „ „	3.4
1922 : „ „ „	3

The proportional mortality from tuberculosis in these 50 towns was :

	Per cent.
1905-12	15-16
1912	12
1913	9.5
1919	15.5
1922	14.8

Among the 850,103 inhabitants of these 50 towns there were, in 1922, 2,111 deaths from tuberculosis, or 2.5 per thousand. The general average mortality for the same period in the same towns was 20.7 per thousand. In towns of over 5,000 inhabitants, therefore, tuberculosis is responsible for one-seventh of the deaths.

If we assume a similar rate of mortality from tuberculosis for the rest of the country, we arrive at the conclusion that this disease causes approximately 14,583 deaths per annum in Bulgaria, a figure which, having regard to the fact that the average duration of the disease is about five years, entitles us to suppose that there are about 72,000 tuberculosis cases in the country, or 14 per thousand of the total population.

The mortality from tuberculosis at Sofia was :

	Per ten thousand.
1911-12	30
1917	35
1918	39
1919	45.6

At Plevna, Slivno and Varna, the death rate has reached 60 per hundred thousand.

Tuberculosis is also beginning to spread among the rural population. Army health statistics covering a period of ten years show that, of the recruits from the towns between 20 and 25 years of age, 7.6 per thousand are affected with tuberculosis. For the same period, the incidence of tuberculosis among the recruits from the country districts was 8.9 per thousand.

Among the causes which have contributed to the spread of this disease since Bulgaria's emancipation, we may mention : the over-sudden transition to modern life,

with its intense physical strain, its workshops, factories, schools and offices in which sanitary conditions were deplorable, inadequate nutrition and the lack of knowledge of hygiene among the people.

During the wars the population passed through a period of intense strain, nervous disturbance and acute famine, which wore out the organism and predisposed it to tuberculosis.

Owing to lack of adequate hospital accommodation, tubercular soldiers were sent back to their homes, where, as a result of overcrowding, insufficient food and general poverty, conditions were precisely such as would lead to the propagation of the disease.

The exodus of the rural population into the towns, where they find occupation as servants, workmen and soldiers and whence they often return with tubercle bacillus, has contributed largely to the spread of the disease in the country districts.

Bulgaria possesses two sanatoria for cases of pulmonary tuberculosis, one at Troian, with 50 beds, founded in 1905, the other at Iskretz, founded in 1919, with 100 beds. There is also a sanatorium for surgical tuberculosis cases near Varna. This establishment, which was founded in 1922 in a well-sheltered situation, including a small sea frontage, contains 170 beds and is open all the year round.

The towns of Sofia, Philippopolis, Rustchuk, Lovech and Trnova each possess special accommodation for tubercular patients who cannot be admitted to the sanatoria, but whose state of health necessitates hospital treatment.

Patients suffering from open tubercular lesions are admitted into second- and third-class hospitals. No single hospital, however, may devote more than half its total number of beds to such cases, and patients may not remain in the hospital for more than three months.

The following table shows the number of tubercular patients treated in the State sanatoria and hospitals in 1922 :

Name of Hospital.	Pulmonary t.b.c.	Osseous t.b.c.	Articular t.b.c.	Ganglionic t.b.c.	T.b.c. of the Abdominal Organs.	T.b.c. of the Urino-genital Organs.	T.b.c. of Other Organs.	Sex.		Total.
								M.	F.	
Iskretz Sanatorium	520	—	—	—	—	—	—	316	204	520
Troian Sanatorium	302	—	—	—	—	—	—	198	104	302
Varna Sanatorium	—	—	60	330	16	—	11	212	202	414
First-class hospitals	2,556	329	147	182	231	83	178	2,312	1,394	3,706
Second-class hospitals	458	49	23	48	81	11	64	456	278	734
Third-class hospitals	199	7	6	3	17	2	8	149	93	242
Special hospitals	1	—	—	—	—	3	—	—	4	4
Total	4,036	385	236	563	345	109	261	3,643	2,079	5,922

The Sofia section of the " Society for the Prevention of Tuberculosis " has set up a tuberculosis dispensary, which is working very satisfactorily. It is the only one of its kind in Bulgaria.

During 1923, there were 18 holiday colonies in Bulgaria, attended by 1,300 children in all.

Lupus is very common among the poorer rural population. The patients have often to be supported by their families or the State.

The dermatological clinic at Sofia has a special branch with a Finsen apparatus for the treatment of lupus.

2. *Malaria.*

Malaria is one of the commonest diseases in Bulgaria, where it has caused the abandonment of whole villages. In 1909, the Directorate of Public Health sent three Bulgarian doctors to Italy to study the methods adopted in that country to combat malaria, and as far back as 1910 "Rules for the Prevention of Malaria" were published and an anti-malaria campaign was organised in the regions of Burgas, Vidin and Tatar-Pazarjik. Quinine was distributed free as a preventive and curative, and efforts were made to destroy mosquitoes. Patients were examined and quinine distributed by the provincial and district medical officers of the malarial regions.

During three years of the European war, 400,000 malaria-infected soldiers were reported in the Bulgarian Army in the malarial regions of Macedonia, the Dobruja and Thrace. The incidence of malaria was considerably increased by the passage of the armies of occupation, and by the arrival of prisoners and Russian refugees from infected areas.

In 1919, the Directorate of Public Health promulgated a "Law on the Campaign against Malaria", setting up an Inspectorate for Malaria. This inspectorate, which acts only in localities declared by the General Medical Council to be infected, consists of a medical expert on malaria, a hydraulic engineer and a zoologist. Towards the middle of 1922, 495 towns and villages in Bulgaria, grouped in 11 malarial regions with from 14 to 60 places in each, were reported to be infected. A Medical Inspector of Malaria was appointed to each of the 11 areas.

As malaria is not notifiable, it is not easy to determine the number of existing cases. The Directorate of Public Health has carried out an enquiry with a view to ascertaining geographical distribution and incidence of the disease. Information collected in 1921 in 86 health districts, comprising 1,325 localities selected from all parts of the country, show that five districts were free from malaria ; in 30 districts malaria was very rare (from 0.8 per thousand to 5 per thousand); in 20 districts the incidence reached 20 per thousand, and in others 87 and even 92 per thousand.

During this enquiry, 73,855 malaria cases, *i.e.*, 1.5 per thousand of the total population, were examined in State, provincial and communal dispensaries. Of these, 37,858 came from the 11 malarial areas, which have a total population of 363,763. In these areas the Inspectors of Malaria examined, in 1922, 23,863 school-children, noting 8,839 cases of splenal hypertrophy, *i.e.*, 37 per cent.

Malaria is widely prevalent throughout four basins :

(a) The Black Sea basin, with the three malarial areas of Varna, Burgas and Aitos ;

(b) The Danube basin, with the three malarial areas of Vidin, Lom and Sistovo ;

(c) The Maritza basin, with the three malarial areas of Pazarjik, Philippopolis and Pambol ;

(d) The Struma basin, with the malarial area of Gorna-Jumaïa.

Of all these areas the Burgas area is the most heavily infected.

The *Anopheles maculipennis* is very common in the plains and up to an altitude of 1,300 metres. The marshes and pools in the plains, with their muddy bottoms and quantities of weed, are the favourite haunts of the larvæ.

The *Anopheles bifurcatus* is very rare in Bulgaria.

The *Mysorrhynchus pseudopictus* is met with in Southern Bulgaria, particularly in the rice-fields. It does not enter houses, and probably bites persons sleeping in the open fields during the working seasons.

The first egg-laying season extends from the beginning to the end of April. As the temperature is still low at this period, development is very slow, and the eggs hatch out at any time from the middle of May to the beginning of June. If the spring is particularly cold, the first brood hatches a week late.

The second batch of eggs is laid between the beginning and the last welk of June, and the second generation is hatched between the beginning and second half of July.

A third brood is hatched between the beginning of August and the middle of September. When the summer has been dry, the third brood frequently fails to hatch.

Bulgaria, with her 172,000 square kilometers of lakes and marshes, forms a very favourable habitat for mosquitoes.

Although higher than the Roumanian side, the Bulgarian bank of the Danube, with its numerous tributaries flowing into the main stream at the same point and thus forming marshes and its periodical floods, provides favourable breeding conditions for mosquitoes, though the part played by them must not be over-stressed.

In 1923, in the district of Philippopolis, 339.4 hectares were under rice, and in the district of Tatar-Pazarjik 135.2 hectares. Generally speaking, very few mosquito larvæ are found in the rice-fields ; they are more numerous in the stagnant waters which lie round about.

The ditches along railway lines and roads generally contain enough water for the hatching of at least one generation. The immediate neighbourhood of the peasants' dwellings, with their shallow and ill-constructed wells, surrounded by puddles, their kitchen-gardens intersected by little irrigation canals and streams, and the clay-beds worked for brick-making, affords excellent conditions for the development of mosquitoes. The stables situated in the immediate vicinity of the dwellings, often in the same building, provide a refuge for the insects in winter and summer.

Before the World War, malaria was rare in the mountain villages. The disease was imported into them by inhabitants who came down into the plains as agricultural labourers.

The incidence of the disease is highest during the months of August and September.

In 1922, the Inspectorate of Malaria examined 43,201 cases and made 39,449 blood-tests, of which 7,276 gave the following positive results :

Tertiary malaria in 5,252 cases ;
Tropical malaria in 1,770 cases ;
Mixed forms in 262 cases.

The tertian form is to the tropical form in the proportion of 1.3. The quartan form exists in Bulgaria, but no case was reported in 1922. Malaria assumes a benign form in Bulgaria, and complications are rare ; the mortality from the disease is very low. In 1921, only 156 deaths from malaria were returned throughout the whole of Bulgaria.

The Inspectorate is practically independent as regards the organisation of measures against malaria, only very important questions being submitted to the General Medical Council for approval. Every malarial area has an inspector, with a preparing assistant for microscopic analysis, a number of minor officials responsible for the distribution of quinine, and labourers for minor sanitary improvement works. Quinine is distributed by " feldschers " — where there are any — or by schoolmasters, priests, secretaries of communes, mayors, etc.

The malaria campaign is not organised on scientific lines. Uniform steps are taken everywhere, without regard to local conditions, and the remedy applied is everywhere the same — quinine for prevention and cure and the destruction of mosquitoes.

The Inspectorate attaches great importance to hydraulic sanitary improvements. In its annual report for 1922, it divides the measures taken into two classes :

(a) Palliative measures: quininisation, oiling, mechanical protection and sanitary propaganda ;

(b) Radical measures: hydraulic sanitary improvements.

In every locality recognised as infected, some particular person is responsible for the distribution of quinine and the taking of blood-samples. The blood is sent to the medical inspector's laboratory, and, if the results are positive, the patients undergo quininisation. The persons responsible for the distribution of quinine, unfortunately, receive no special training.

The treatment is as follows :

Every day for five days	1 gr. of quinine ;
Five days' interval ;	
Every day for four days	1 gr. of quinine ;
Four days' interval ;	
Every day for three days	1 gr. of quinine ;
Three days' interval.	

Curative quininisation is discontinued in winter and spring, patients being treated by the district medical officers or in hospital. This treatment is to be regarded as a palliative ; relapses are frequent ; many cases are not cured at all, and in the spring become carriers spreading the disease. Malaria-infected cases are treated free of charge in the hospitals.

With a view to providing the population with cheap, good quality quinine, the State has established a monopoly. Some of the quinine is sold by private chemists, while the rest is distributed free to the population in the malarial regions. The amount of quinine consumed annually is about 6,000 kgs., representing an annual expenditure of 15,000,000 levas.

Adult mosquitoes are not destroyed in winter. Oiling is not carried out on a large scale, and the persons responsible for this work have received no training. In seriously infected areas the inspectorate provides hospitals, barracks, railway-stations, etc., with wire gauze free of charge. Proprietors of hotels, inns, factories, etc., are obliged to provide their buildings with wire gauze at their own expense.

The radical measures which the inspectorate has in view (the elimination of conditions favourable to the development of mosquitoes by sanitation works in lakes and marshes) cannot easily be effected, since lakes and marshes cover an area of 162,000 sq. km., and the State has been greatly impoverished by the war. Up to the present, moreover, these measures have not yielded any appreciable results.

No buildings may be erected in the affected areas or areas under sanitary improvement without the permission of an inspector for malaria. The inspectorate has published a popular propaganda handbook, instructions for the use of elementary-school teachers, and a poster ; some inspectors have also given lectures.

3. *Venereal Disease.*

Syphilis has existed in Bulgaria in an endemic form for over a century. As a result of the treatment given in hospitals and dispensaries, the number of cases was decreasing considerably before the war. During the war period venereal disease spread very appreciably : 14 per cent of the soldiers suffered from syphilis, and 21 per cent from gonorrhœa. As it was impossible to demobilise the army in accordance with the scheme previously drawn up, men suffering from these diseases were sent home without treatment, and spread the trouble throughout the whole country, in the villages as well as towns. The passage of the armies of occupation considerably increased the number of cases, and it would appear that since the war venereal disease has been much more prevalent. Since 1920, any person suffering from syphilis and coming to a hospital or dispensary is entered on a register. If the patient is unwilling to give his name, nothing more than his initials are entered, and this information is communicated to the local health authorities nearest his home. The latter then register the name of the patient.

At the end of each year the communal medical officers send copies of their registers to the district medical officers. The latter forward the particulars to the provincial medical officers, who in turn transmit them to the Directorate of Public Health. The number of cases thus registered in 1923 was 3,393, but the actual number of cases of syphilis is far greater ; 1,366 cases were treated in the hospitals in 1923.

In 1922, the Directorate of Public Health organised two mobile squads to conduct a campaign against syphilis in the provinces of Vidin and Vratza, near the Serbian frontier. These squads examined the whole population of the villages and small towns in the provinces, and carried out blood-tests on all persons who did not show clinical symptoms.

During 1923, these squads discovered and treated 2,056 cases in the two provinces in question. In certain villages they observed veritable epidemics of syphilis :

At Chereshovitza, a village of	450	inhabitants,	280	cases	(62 per cent) ;
,, Kopilovtzi, ,, ,, ,,	1,638	,,	753	,,	(46 per cent) ;
,, Chiprovtzi, ,, ,, ,,	2,423	,,	238	,,	(9.8 per cent).

Before the war, tertiary lesions of the skin and bones were observed, and now certain lesions of the nervous system are reported — tabes and general paralysis.

In the towns, syphilis is generally propagated by sexual intercourse and in the country districts without sexual intercourse. The very widespread custom in Bulgaria of all eating out of the same plate, and only using one glass or bowl, largely contributes to the spread of the disease, and infection from this cause is very frequent.

Before the war, gonorrhœa was very common among the urban population, and at present many cases are met with in the rural districts.

Popular ignorance is one of the principal causes of the prevalence of venereal diseases. The people have not been instructed as to their nature, the manner of their transmission and the methods of prophylaxy.

The health administration has commenced propaganda in the schools ; sexual matters are explained to the children in the elementary schools. It has also organised lantern lectures on venereal diseases. These lectures are well attended, and the people seem to take a keen interest.

As yet there is no legislation regarding the ascertaining of cases of venereal disease and their compulsory treatment, nor are there any special institutions for the scientific diagnosis and treatment of these diseases. There is no co-operation between the medical services of districts and communes on the one hand, and the hospitals on the other. When sources of infection are discovered, the communal and district medical officers are not notified, and they are consequently unable to take the necessary prophylactic measures.

Venereal disease is treated free of charge in the hospitals and dispensaries.

Before the war, Bulgaria possessed two venereal services attached to the first-class hospitals of Sofia and Rustchuk respectively. In 1923, there existed a venereal clinic at Sofia and venereal services attached to the hospitals at Vidin, Plevna, Trnova, Rustchuk, Varna and Philippopolis. Sofia has also a venereal dispensary.

In the first-class hospitals of the country, there are in all 295 beds reserved for venereal cases. Cases are also treated in first-, second- and third-class hospitals which possess no special organisation for the purpose. In 1923, 2,848 venereal cases were treated by the venereal services of the hospitals. Of these, 1,366 were suffering from syphilis, 271 from soft chancre, and 1,455 from gonorrhœa. There are very few specialists, and the doctors in the second- and third-class hospitals are, generally speaking, insufficiently trained in the diagnosis and treatment of venereal disease.

Owing to the ignorance of the population and a certain feeling of reluctance, many sufferers go to quacks instead of consulting a doctor. Most persons suffering from venereal disease do not undergo regular treatment.

There is as yet no legislation in Bulgaria for the prevention of venereal disease.

Provision is made for the punishment of certain offences in connection with prostitution and brothels. On the other hand, there is no provision for the punishment of persons suffering from venereal disease and infecting others.

Persons suffering from acute or chronic infectious disease may not work as bakers, butchers, milkmen, coffee-house keepers, hairdressers, masseurs, etc. As, however, the health authorities have no means of tracing cases of syphilis, the protection thus given is illusory, whereas severer measures are taken in the case of tuberculosis.

Prostitution greatly increased during the European War, owing to the lowering of general moral standards, the economic situation, and the lack of associations for protecting and finding employment for girls. The measures in force against prostitution are the following :

(1) Prostitutes are registered and are subject to medical and police supervision;

(2) Prostitutes suffering from disease are isolated and must undergo medical treatment.

The medical officers of the provinces are responsible for the medical inspection of prostitutes. The communal medical officers examine the prostitutes twice weekly, and send all who are diseased to hospital. Brothels were very numerous in Bulgaria before the war ; they are now fast disappearing (there is at present only one).

In spite of regulation, many women still engage in prostitution and avoid supervision by working as housemaids, chambermaids, music-hall artistes, etc. Regulation is ineffective, supervision insufficiently strict and medical examination too superficial.

4. *Cancer.*

In the opinion of many doctors, cancer is tending to become more prevalent. In 1923, 1,699 patients — 832 men and 867 women — were treated in the dispensaries and hospitals. The disease is more frequent among women, because it more often attacks the female genital organs (127 cases) and the breast (138 cases).

The following table shows the organs affected in the 1,699 cases examined :

Organs.	Men.	Women	Total.
1. Buccal cavity	225	151	376
2. Stomach and liver	184	149	333
3. Œsophagus	4	1	5
4. Intestine	11	6	17
5. Rectum and peritoneum	32	38	70
6. Pancreas	—	1	1
7. Larynx	11	—	11
8. Female genital organs	—	127	127
9. Breast	12	138	150
10. Testicle	8	—	8
11. Penis	8	—	8
12. Bladder	3	—	3
13. Kidney	1	—	1
14. Skin	141	102	243
15. Cancer of other organs or non-localised	192	154	346

The Department of Infectious Diseases is proposing shortly to carry out an enquiry into the incidence of cancer, its geographical distribution and occupational frequency, the number of deaths occurring in hospital, etc.

Trachoma.

Trachoma is fairly common. An enquiry conducted in 1907 in the district of Karlovo showed that 10 to 20 per cent of the population were suffering from the disease. At Dabene, for instance, among a population of 1,800 there were 225 cases, or 12.5 per cent.

At Vognagovo, there were 310 cases among a population of 1,589 (20 per cent).

Seven villages with a total population of 3,761 inhabitants provided 368 cases (10 per cent).

Trachoma is very frequent among school-children. In 1906, 25 per cent of the school-children of Karlovo were trachomatous. In the village of Sopot, out of 300 pupils examined, 61 were found to be suffering from trachoma (20 per cent). Out of 4,324 school-children examined by Dr. Chakaloff, 187 were trachoma cases (4.3 per cent).

Sofia possesses an ophthalmic clinic. There are ophthalmic wards in the first-class hospitals at Varna, Rustchuk, Philippopolis and Plevna. Unfortunately, such wards are not sufficiently numerous ; they are able to receive only a very limited number of patients, many of whom are obliged to leave the hospital before they have been cured.

The new draft public health law includes trachoma as a notifiable disease.

Drunkenness.

Following on the cruel and devastating wars in which the country has been engaged, the consumption of alcoholic liquors and the manufacture of alcohol has enormously increased, while a vast number of public-houses have been opened.

The destruction of a great number of vines by phylloxera has led to a considerable decrease in the consumption of wine. We may quote a few figures :

In 1897	Bulgaria	consumed	76,362,051	litres	of wine.
1914	,,	,,	33,605,418	,,	,, ,,
1918	,,	,,	62,028,100	,,	,, ,,
1922	,,	,,	52,555,600	,,	,, ,,

The amount of brandy consumed was :

In 1907	26,716	hectolitres.
1914	48,806	,,
1922	55,248	,,

The amount of beer consumed was :

In 1896	31,958	hectolitres.
1900	37,732	,,
1905	93,112	,,
1910	138,521	,,
1915	20,876	,,

Bulgaria consumes on an average 10 litres of pure alcohol per head of the population per annum.

In 1910 there were 15,138 public-houses.
1915 ,, ,, 16,993 ,, ,,
1919 ,, ,, 15,954 ,, ,,
1922 ,, ,, 21,000 ,, ,,

That is to say, one public-house to every 250 inhabitants.

There is no anti-alcoholic legislation in Bulgaria.

The 1921 Education Law prohibited the opening of public-houses within 50 meters of schools, barracks, etc. It is a punishable offence to intoxicate a minor. Communes may abolish public-houses after holding a referendum; 40 or 50 villages have availed themselves of this possibility to introduce prohibition. The mayors, in agreement with the local police authorities, determine the closing-hours for cabarets, restaurants and hotels.

It is an offence, punishable by fine, for coffee-house keepers to serve alcoholic drinks to an intoxicated person ; to incite a person to become drunk is also an offence punishable with a fine. Any person found drunk in a public place is fined 125 levas.

Since 1923, railway men have been forbidden to take alcoholic refreshment during working hours. Persons working in railway-stations, on locomotives, trains, and the maintenance of the permanent way may not take alcoholic refreshment within 10 hours before coming on duty. Any person employed in these services found intoxicated while at work is immediately dismissed. Persons employed in the other services are dismissed when found to be intoxicated on the second offence.

A special law for the prevention of drunkenness is under consideration.

Anti-alcoholic propaganda, which was commenced in Bulgaria by American missionaries, has been continued by private societies which receive a subsidy from the State :

The Bulgarian Abstinence League (1893) ;
The Christian Women's Abstinence League ;
The Undenominational Union of Young Abstainers (1910) ;
The Undenominational Union of School Teachers for the Prevention of Drunkenness (1922) ;
The Undenominational Union of Doctors for the Prevention of Drunkenness (1922) ;
The Undenominational Union of Railwaymen Abstainers (1923).

These societies include over 1,200 members. They carry on energetic propaganda by means of publications and lectures, and issue five periodicals.

Anti-alcohol instruction has been introduced in all the schools.

MATERNITY AND CHILD WELFARE.

1. *Maternity.*

The lying-in hospital at Sofia ; the obstetrical and gynæcological departments in the first-class hospitals at Sofia, Varna, Plevna and Philippopolis; all the second- and third-

class hospitals and State, provincial and communal dispensaries are bound to provide medical attendance for pregnant women. Hospital doctors must test the blood of all pregnant women undergoing treatment at their hospitals with a view to ascertaining the presence of syphilis.

The number of confinements which took place in the hospitals was :

In 1921	1,594
1922	1,715
1923	1,654

Medical attendance at home is given in towns by the medical officers and midwives. The communal medical officers are obliged to attend poor persons during and after confinement ; midwives are bound to answer every call at any hour of the day or night. Doctors and midwives are entitled to charge fees.

As the number of midwives is inadequate, particularly in the country, confinements are often attended by old women who have no idea of asepsia or cleanliness, and puerperal fever is very frequent. Although puerperal fever is a notifiable disease, it has not been possible to obtain statistics regarding its incidence. It is seldom notified, and the information given is often inaccurate.

Every working woman when pregnant is entitled to consult the medical officer of her insurance fund twice before actual child-birth. She is also entitled to a period not exceeding 12 weeks' leave (one of six weeks before delivery and the same period after delivery), the attendance of a doctor and midwife, a free supply of medicaments and sanitary material, and a daily allowance of from 12 to 30 levas. The law accords her one hour's leave a day for the first six months to suckle her child. The communal and ecclesiastical authorities are responsible for public maternity relief. There are also six private associations for maternity relief.

2. *Child Welfare.*

Infant mortality is very high in Bulgaria. This is due to the lack of health knowledge among mothers, the inadequate supervision of children, the practice of artificial feeding, deplorable housing conditions and poverty. Among the urban population the development of industry has led to a considerable increase in the death rate among unweaned infants. In the towns digestive disorders are the commonest cause of death, while in the country death is mainly due to disorders of the respiratory tract. At Sofia, for instance, in 1922, out of 4,450 children born, 684 died before weaning, and of these, 275 deaths (40 per cent) were due to disorders of the digestion.

In 1923, the Bulgarian Red Cross Society organised at Sofia three consultation centres at which poor mothers can obtain information from specialists regarding the care of very young children.

In 1903, the Eudoxia Charitable Association founded a home for the care of working-class children, aged from two to six, during working hours. In 1907, this association founded an organisation for supplying milk and a home for foundlings.

The hospitals and dispensaries arrange free consultations for children.

In Bulgaria there are only two special services for children — the Pediatrical Clinic

and the children's ward in the Alexander Hospital at Sofia. In the interior of the country children are cared for by the hospitals and dispensaries. The Varna Sanatorium receives tuberculous children (surgical cases).

The municipal and ecclesiastical authorities are responsible for the public relief of children. A number of private societies also provide relief.

Foundlings are mostly illegitimate children. As there are no legal dispositions for the identification of putative fathers, mothers are responsible for the children, and frequently abandon them. Foundlings are generally handed over by the commune to nurses or foster-mothers, who are ill-paid ; frequently, indeed, these persons have to bear the cost of bringing up the children.

The number of orphans is very high. Official statistics show that in 1918 there were 182,318.

At the beginning of 1924 there were 144,994 war orphans, of whom 66,233 were both fatherless and motherless, and 78,761 were fatherless.

The State has established a " War Orphans' Fund ", consisting of a special annual grant of 5,000,000 levas and a percentage deducted from certain taxes, amounting in all to 35,000,000 levas per annum. This fund maintains 22 public orphanages and makes grants to ten private orphanages, six of which are at Sofia. In 1923, the Fund provided for the maintenance of 5,977 orphans who were both motherless and fatherless, 1,393 being accommodated in the orphanages and 4,584 in families.

In the orphanages the children receive elementary instruction up to the age of fourteen ; then, according to their aptitude, they are apprenticed or sent at the expense of the State to technical schools. When they have terminated their apprenticeship or training, some are given a little capital to enable them to set up in business for themselves. The fund expends about 60,000,000 levas per annum, of which about 25,000,000 are provided by the provincial and communal councils.

In 1917, there was founded at Sofia an association to combat juvenile delinquency and protect child prisoners. The object of this association was to isolate young offenders, protect them from the disastrous influence of adults, and enable them to obtain elementary education and learn a trade. With State financial assistance, the association is building a reformatory on the outskirts of Sofia.

SCHOOL HYGIENE.

Education is compulsory, and free for seven years, four of which are devoted to elementary and three to secondary teaching. Education has made great strides among the people since this measure was put into force. In 1880, only 5 per cent of the male population and 1.5 per cent of the female population could read and write. In 1910, the proportions were : men, 58.94 per cent ; women, 25.76 per cent ; and in 1920 : men, 63 per cent ; women, 44 per cent.

The following table shows the number of scholastic establishments, the strength of the teaching staff, and the number of pupils during the scholastic year 1923-24 :

Nature of Establishment.	Number.	Number of Teaching Staff.	Number of Pupils.
Kindergartens.....	44	44	1,867
Elementary schools	4,162	13,496	471,161
Secondary schools	1,890	6,932	133,060
Higher secondary schools	45	1,209	17,050
Training schools	17	449	7,261
Colleges	13	240	3,209
Total.....	6,111	22,370	633,608

There are also 90 technical schools in the country.

Up to 1904, Bulgaria possessed no school medical service. Only the higher secondary schools and normal schools had doctors attached to the staff. The school medical service was introduced into the intermediate categories of schools in 1904. The school doctor acts as adviser to the head master of the school in all questions connected with school hygiene and the health and normal development of the pupils. He also teaches hygiene. The school doctor sends in one report (basic model) at the end of each year, and during the scholastic year a number of reports on various subjects.

As yet there are no school visiting nurses in Bulgaria. The doctor examines pupils and sends any poorer children who may be requiring medical treatment to the nearest hospital. Poor children are treated free ; children whose parents can afford it may be treated at their own expense wherever they please.

A medical inspector of schools is attached to the Ministry of Education, his duties being to correlate, direct and supervise the various school health services.

School medical officers have held two congresses, and the Ministry formerly published a periodical entitled *School Hygiene.* This school hygiene organisation was abolished in 1919 for reasons of economy, but was re-established in 1924.

During the financial year 1922-23, 4,928 buildings were used as school premises. Of these only 2,038 were up to the standard of modern hygienic requirements. The school fittings are still primitive in the country districts. Very few schools possess baths.

Every pupil is provided with a small booklet in which the school doctor enters the result of his anthropometrical examination, his first medical examination, and, at the end of each year, the pupil's state of health and the diseases from which he has suffered during the year. Pupils suffering from tuberculosis are requested to leave the school.

Physical exercises, games, sports, gymnastics and manual work are obligatory in the schools.

The Scholastic Museum of the Ministry of Public Instruction has, since 1906, possessed a laboratory of school hygiene furnished with all the necessary apparatus for

examining pupils and making various tests (fatigue tests, etc.); the results obtained hav not been published. There is no sanatorium for children under 14 years of age sufferin from pulmonary tuberculosis ; only children over 14 are received at the Troian an Iskretz sanatoria.

INDUSTRIAL HYGIENE.

In Bulgaria there are 1,592 industrial establishments. This total includes all estab lishments with modern plant worth 20,000 gold francs or more, all establishments usin more than 5 h.p. and employing not less than 15 workmen, and all establishment (irrespective of horse-power used) employing not less than 20 workmen.

In 1923, 125,680 workmen paid contributions to the insurance fund. The numbe of insurance cards issued is probably about 180,000.

The first Factory Act was the law of 1925 on female and child labour in industria establishments. This law was superseded on June 15th, 1917, by a law on industria hygiene and security.

In 1921, Bulgaria ratified the International Convention on expectant mothers, an in 1922 the Convention on night-work for women.

Under the law no boys under 14 may be employed. Certain establishments onl admit them at the age of 16 and others at 18 years. Minors up to 18 years of age ma not be employed on night-work.

The working day is fixed at eight hours and the working week at 48 hours.

Every industrial establishment or enterprise employing more than 10 workmen mus have a medical inspector of labour to supervise the health of the establishment an give first-aid in case of illness or accident. The owner of the establishment may himsel choose the doctor, who is appointed, and may be dismissed, by the Ministry of Commerce Industry and Labour. The fees of medical inspectors are paid by the owner of th establishment to which they are attached. They may combine these duties with others Every commune inhabited by more than 1,000 workmen must have its medical inspecto of labour. These doctors are under the supervision of the Ministry of Commerce Industry and Labour.

Bulgaria has instituted compulsory civil service. The labour thus provided is use in the construction of railways, roads, harbours, conduits, canals, the correction of water courses, the draining of marshes, and other works of public utility. Every man of 20 year of age is bound to perform eight months' civil service. Between 20 and 40 years of ag every citizen must perform a maximum period of ten days' civil service per annum Sick persons, students, and certain classes of officials are exempt. This civil service i organised by the Ministry of Public Works.

In 1921, only 10,000 of the 50,000 men liable to civil service were enrolled ; in 1922 22,844 and, in 1923, 28,754. For the most part the men are placed at the disposal of th Ministries of Public Works, Railways and Agriculture.

In 1921, a civil service health organisation was formed, under the direction of a chief medical officer. Each of the twelve departmental offices and the three rural sections has a medical officer, assisted by a number of " feldschers ", and possesses a small hospital. Serious cases are sent to the civil hospitals and treated free. The health organisation of the civil service costs about 2,000,000 levas per annum, of which 1,380,000 levas are taken up by the salaries of the medical staff.

In 1922, there were 2,245.8 kilometers of railway-track in Bulgaria, employing 18,459 persons. The number of passengers carried during the financial year 1921-22 was 8,215,655. The objects of the " Regulations for the Railway Medical Service ", published in 1906, are :

(a) To protect passengers against infectious disease ;
(b) To ensure the health and welfare of railway employees ;
(c) To avoid recruiting any candidates suffering from physical infirmities which might hamper them in the execution of their work ;
(d) To provide medical assistance for railway employees and their families and for victims of accidents.

The system is divided into several health sectors, each under a railway medical officer. Each sector is divided into at least two sections under the direction of "feldschers". A dispensary and a pharmacy are attached to the headquarters of the medical officers of sectors. In 1915, there were 12 health sectors and 18 sections ; in 1924-25, there were 16 sectors (five at Sofia) and 31 sections. The railway health service is directed by a chief medical officer, who is directly responsible to the Director of Railways, and is assisted by a medical inspector.

The medical officers of sectors make two tours of inspection monthly. They examine patients, take all necessary precautions against infectious diseases, and examine candidates for vacancies.

Every candidate for a post in the railway service must produce a medical certificate signed by the railway medical officer of the sector. The railway staff has to undergo periodical medical examination. Special rules are laid down for this examination, including eye and ear tests.

Like all State employees, the staff of the railways is entitled to free medical treatment and medicaments. For this purpose the State deducts one per cent from their wages.

In 1923, there were 18,549 railway employees. During that year the railway dispensaries examined 81,033 patients, of whom 54,159 were employees and 26,874 members of their families.

PROTECTION OF THE DEFECTIVE AND DISABLED.

The number of defective and disabled persons in Bulgaria is very high. Information furnished by twelve provinces with a total population of 4,526,671 shows that there were 1,947 blind, 3,374 deaf-mutes, 1,151 lunatics, 2,173 epileptics, and 2,144 idiots in 1921.

The number of blind is really much greater. The 1910 census showed their number to be 4,485, of whom 2,005 were men, 2,209 women and 271 children under 14 years of age, out of a total population of 4,337,513 inhabitants.

A Blind Children's Institute was founded at Sofia in 1905. Here the children receive a general elementary education, preparatory manual training (modelling, basket-work, brush-making, etc.) or special musical instruction. During the year 1922-23, there were 45 pupils at the Institute, which had a staff of eleven teachers.

There are three institutes for deaf-mutes. The first, founded at Sofia in 1898, was taken over by the State in 1906 ; the two others are at Varna and Philippopolis. In 1922-23 these institutes were attended by 103 pupils, under 19 teachers.

There are four classes at Sofia for children with impediments in their speech.

There are in Bulgaria 13,478 war cripples. During the European War a home for disabled persons was founded at Sofia, with a manual-training school at which knitting, basketwork, brush-making, cobbling, cabinet-making, toy-making, etc., are taught. The course lasts for two years. The students live in a hostel near the school. At the end of their apprenticeship, the fund for disabled persons provides them with the tools they require to carry on their trades.

Sixty-three disabled persons terminated their apprenticeship at the home during the financial years 1922-23 and 1923-24.

The number of lunatics and feeble-minded persons is very considerable. The Directorate of Public Health maintains a register of lunatics and keeps them under supervision (particularly when cases are dangerous), taking steps to ensure their despatch, in good time, to mental hospitals, for the proper management of which he is responsible.

There are two wards in Bulgaria for persons of unsound mind, in the first-class hospitals at Sofia and Lovech, with 85 and 100 beds respectively, and four hospitals for incurable lunatics situated at Karlukovo, Biela, Haskovo and Kotel, with 330 beds in all.

Before a person of unsound mind can be received into a mental hospital, the following documents must be submitted to the director of the institution :

(a) A certificate of identity issued by the commune ;
(b) A medical certificate on a special form ;
(c) An application for admission signed by the patient's relatives or by the police authorities.

Medical directors of mental hospitals can decide whether they will receive patients who themselves apply for admission.

When the patient is cured, he is discharged by the head of the institution without further formalities. Patients who are not dangerous to those around them may be sent for by relatives, if the latter appear to be reliable. Incurable cases are sent on to asylums for incurables or back to their families.

REFUGEES.

After the Peace of Neuilly, Bulgaria was flooded with refugees. About 200,000 of them came into the country from Macedonia, Thrace and the Dobruja. This movement has not come to an end, and it will continue for some time yet ; 350,000 refugees from Greek Macedonia and Western Thrace were expected in 1924 and 1925. There are also 28,000 Russian refugees.

According to official statistics, the refugees numbered 220,000 at the end of 1923. This is a considerable under-estimate, because the figures only include persons who applied to the State for relief. At that time they probably numbered 500,000, or one-tenth of the total population.

The arrival of all these refugees at once and the deplorable conditions under which they lived for some time after their arrival in Bulgaria, camping in the open or living in carts, wagons, cellars or hovels, have had a disastrous effect on the general health of the country. The children of the refugees have suffered most of all, and the death rate among them is very high. The administrative authorities, assisted by the Red Cross, are making efforts to provide house-room for the refugees and supply them with food for a certain time. Under the Law of December 21st, 1920 — which has since been amended — each refugee is given, free of charge, building materials and the implements of his trade. Farmers receive land, a personal loan of 50,000 levas, and a mortgage loan of 60,000 levas for the erection of a small house. Of the 500,000 refugees who have come to Bulgaria, 200,000 are still homeless and without means of support. The constant arrival of fresh refugees helps to increase their distress.

Bulgaria has no more cultivable land to grant, except in the department of Burgas, which is regarded as the most unhealthy district in the country, its population being decimated by malaria.

PUBLIC HEALTH EXPENDITURE.

From 1880 to 1924 the budget of the Directorate of Public Health has amounted on an average to 3.25 per cent of the total budget of the State. During the periods 1880-84 and 1914-15, it reached 4 per cent ; in 1917-18, 4.5 per cent ; and in 1919-20, 5.25 per cent. The proportion decreased after the conclusion of the Peace of Neuilly, falling to 3.5 per cent for the financial year 1921-22 and 3.25 per cent for 1922-23.

The general State budget for the financial year 1923-24 was 5,596,168,005 levas, and the budget for the Directorate of Public Health 168,712,054 levas, *i.e.*, 3.3 per cent of the total.

The expenditure of the Directorate of Public Health for the financial year 1923-24 amounted to 162,000,000 levas, allocated as follows :

	Levas
1. Central administration	2,000,000
2. Provincial administrations	20,000,000
3. Campaign against infectious diseases	23,000,000
4. Public sanitation, etc.	5,000,000
5. Hospitals, etc.	84,000,000
6. Medicaments, instruments, etc.	16,000,000
7. Miscellaneous	12,000,000
Total	162,000,000

Bulgaria expends :

22 million levas on her sanitary administration ;
100 million levas on curative medicine ; and
22 million levas on preventive medicine.

It is not easy to fix the exact amount of the sums expended on preventive medicine and curative medicine respectively, as there is only one budget for both.

Although a great deal is expended on hospitals and similar establishments, they are in a deplorable state. The buildings have long been in need of repair, the linen is torn, instruments and apparatus are in many cases unfit for use, and in the second-class hospitals many medicaments are lacking.

The credits for the campaign against infectious diseases are inadequate. We have no information regarding the expenditure incurred by the provincial and communal councils for public health.

The financial straits to which the country is reduced render it hard for the Directorate of Public Health even to maintain the pre-war institutions and their staff. It is unfortunately unable to take any active steps to improve public health or counteract the danger of racial degeneration.

The State, the provincial councils and the communes are poor. The financial situation, which has been aggravated by the war and the crushing burden of reparations, makes it impossible for the country to contemplate a policy of social reform and the reconstruction of its health organisation.

ORGANISATION OF DEMOGRAPHIC AND MEDICAL STATISTICS.

Bulgaria possesses a very efficient service for general statistics, and medical statistics are compiled by a Statistical Department attached to the Directorate of Public Health.

I. Demographical Statistics.

1. *Census.*

A census is taken every five years, at State expense, by the Directorate-General of Statistics, which also examines the census papers. The date of each census is announced by Decree of the Minister of the Interior. The Directorate-General of Statistics is assisted in carrying out the census by provincial census committees presided over by the prefects, district committees presided over by the sub-prefects, overseers and census agents.

The towns of Sofia, Plovdiv, Varna and Rustchuk have their own committees.

Communes are divided into census areas. One census agent is appointed for each area, and an overseer for every 2,000 inhabitants. The overseers verify the lists, have the particulars completed or corrected where necessary, and transmit them to the communal authorities, who prepare a schedule of the population of the commune and send them in turn to the Directorate-General of Statistics.

The figures for the population of towns are published by the Directorate-General of Statistics in the official journal towards the end of January, and the results of the census in the provinces and districts are published on or about February 10th. The lists are verified and corrected by the Directorate-General. Subsequently tables are prepared from the occupational and other particulars collected.

Table No. 1. — *Legal* population, population present at the time of the census, number of households, buildings, estates.

Table No. 2. — Distribution of the population present on the date of the census according to birthplace and nationality.

Table No. 2 *(a)*. — Distribution of inhabitants of non-Bulgarian race.

Table No. 2 *(b)*. — Distribution of foreign nationals according to country of origin.

Table No. 3. — Distribution of the population according to language and religion.

Table No. 4. — Distribution of the population according to standard of education and native tongue.

Table No. 5. — Persons present on the date of the census suffering from physical or mental infirmity.

Table No. 6. — Persons absent from home on the date of the census.

2. *Movement of Population.*

The registration of births, deaths, marriages, etc., was organised in 1923 ; births, marriages and deaths are registered by the official registrar or by the mayor at the time of the declaration or as soon as these magistrates receive notification thereof.

(a) Registration of births. — Births must be notified within one week ; the notification is made by the father or, failing him, by the doctor, the midwife, or one of the persons present at delivery. The birth and sex of the child are verified by the medical officer of the commune or, failing him, by the registrar, who makes the entry in the register, prepares a birth certificate, and issues a certificate of registration. In the case

of twins, two birth certificates are drawn up, care being taken to indicate which of the twins was born first.

If a child is still-born, that is to say, if it has never breathed after birth, it is registered as still-born, and the registrar fills up a special form (yellow). If, however, the child has shown signs of life after birth, the registrar fills up a birth certificate and a death certificate.

The certificates are sent to the Directorate-General of Statistics, monthly in the case of towns and quarterly in the case of rural districts.

(b) *Registration of marriages and divorces.* — Marriages must be notified to the registrar of the commune in which the religious ceremony takes place. Notification must be made within seven days by one of the parties. The formal act of marriage is drawn up in the presence of two witnesses. When a court pronounces the dissolution of a marriage, a copy of the judgment is sent to the registrar of the commune in which the marriage took place, and he endorses the marriage act accordingly.

(c) *Registration of deaths.* — All deaths must be notified to the mayor or registrar. Notification must be made by the nearest relatives of the deceased or by the head of the establishment (hostel, boarding-house, prison, etc.) in which death occurred.

The person who notifies death must obtain a death certificate drawn up by the official responsible for verifying deaths. This certificate serves as a burial permit.

The mayor or registrar draws up an act of death, which is copied into the register of births, deaths, marriages, etc. He also fills in and signs a death certificate in a book with counterfoils.

The certificates are detached at the end of each month in the case of towns, and at the end of each quarter in the rural districts, and transmitted to the Directorate-General of Statistics, which publishes these data in the *Monthly Statistical Bulletin* and the *Statistical Year-Book.*

The Directorate-General of Statistics does not publish particulars of causes of death, nor is the notification of such causes obligatory.

The Directorate-General of Statistics prepares statistics of causes of death classified according to infectious diseases and non-infectious diseases.

Every urban or rural commune sends to the Directorate-General of Statistics, at the end of each quarter, a medical statistical bulletin prepared according to a model.

II. Medical Statistics.

1. *Compulsorily Notifiable Diseases.*

The Law for the Protection of Public Health (1909) made the following diseases compulsorily notifiable :

1. Plague ;
2. Cholera ;
3. Smallpox ;
4. Typhus ;
5. Relapsing fever ;
6. Typhoid fever ;
7. Scarlet fever ;
8. Diphtheria.

To this list must be added the following diseases, notification of which is required under supplementary regulation to the Law for the Protection of Public Health :

9. Cerebro-spinal meningitis ;
10. Dysentery ;
11. Measles ;
12. German measles ;
13. Chickenpox ;
14. Erysipelas ;
15. Mumps ;
16. Whooping-cough ;
17. Puerperal fever ;
18. Malignant pustules ;
19. Anterior poliomyelitis (the notification of which was made compulsory by decision of the General Medical Council in 1913).

Under the terms of the Special Sanitary Convention concluded with the Kingdom of the Serbs, Croats and Slovenes the following diseases are also notifiable :

20. Yellow fever ;
21. Encephalitis lethargica ;
22. Serious influenza.

Suspected cases must be notified as well as known cases.

2. *Persons responsible for Notification.*

Notification is made by :

Doctors ;
Heads of families ;
Officials responsible for the verification of deaths ;
" Feldschers " ;
Relatives ;
Persons attending the patient.

If the patient is in an hotel, boarding-house, school, hostel or prison, notification must be made by :

The directors of these establishments ;
Midwives ;
Priests ;
Schoolmasters ;
Directors of industrial establishments.

Every doctor is bound to notify the local health authorities of all cases of infectious disease which he encounters, and to take all necessary steps to isolate the patient and secure disinfection. Medical directors of hospitals must notify all cases of infectious disease received in their institutions. A further declaration is made on the patient's departure.

Officers responsible for the inspection of dead bodies (communal medical officers, " feldschers ", public health inspectors, or, failing these, mayors and deputy mayors — the deaths of Moslem women being verified by women whom the communal authorities can trust) are bound to notify the health authorities or the mayors of all deaths due to infectious disease.

3. *Authorities receiving Notifications.*

At Sofia notifications are made to the head of the municipal health service ; in other towns to the communal medical officer. In localities where there is no communal medical officer, notifications are made to the district medical officer or to the mayor; in villages to the district medical officer, the " feldscher " or, failing him, to the mayor.

Directors of hospitals notify the communal or district medical officers of all cases of infectious disease under treatment in their institutions, both on the reception and on the discharge of the patient.

In garrison towns the communal and district medical officers notify the garrison medical officer of all cases of infectious disease which have been observed in the commune or district. The garrison medical officer in turn notifies the communal or district medical officer of all cases of infectious disease occurring among the troops.

4. *Form of Notification.*

Notification may be made in writing or orally ; it must contain the following particulars:

1. Name of the infectious disease ;
2. Patient's name and surname ;
3. Patient's age ;
4. Patient's address ;
5. Name and surname of the person making the notification.

The Directorate of Public Health provides all authorities responsible for notification formalities with special forms. These forms are divided into two parts. The first part must be filled in when the disease is first observed, and the second part when the patient is cured or dies.

The first part contains the following particulars :

1. Series number ;
2. Name of the infectious disease ;
3. Name and surname of the patient ;
4. Sex ;
5. Age ;
6. Nationality ;
7. Civil status ;
8. Profession ;
9. Address ;
10. Date of commencement of the disease ;
11. Date and place of infection ;
12. Place at which the patient is undergoing treatment ;
13. Number of members in the patient's family ;
14. Whether in the patient's family any other persons suffering from the same disease ; if so since what date ;
15. If there is a room in the patient's house in which he can be isolated ;
16. What places the patient has frequented since becoming infected ;
17. Doctor's signature and date.

The second part contains the following :

18. Measures taken ;
19. Date of cure ;
20. Date of death ;
21. How, when and by whom disinfection was carried out ;
22. Doctor's signature and date.

If the diagnosis was confirmed by bacteriological examination, the fact is also stated. This medical bulletin is sent post free by the doctor to the health authorities.

5. *Time at which Notification must be made.*

Virulent infectious diseases (plague, cholera, yellow fever, smallpox, typhus and relapsing fever) must be notified immediately by telephone or telegraph.

In the case of other notifiable diseases, notification must be transmitted immediately by post.

6. *Registration of Infectious Diseases.*

Each commune has a special register in which all cases notified are entered in chronological order, with the date of infection, the place at which the disease was discovered, and the name of the person making the notification.

7. *Reports and Tables.*

" Feldshers " of sections and communal medical officers send the district medical officer, every ten days, a report on the cases of infectious disease occurring in their sections. The district medical officers send these returns to the medical officers of the provinces, who in turn transmit to the Infectious Diseases Department of the Directorate of Public Health, every ten days, a report on the cases of infectious disease which have been notified in their provinces. These ten-day reports contain the following particulars :

District, Town or Village.	Typhoid Fever.					Diseases reported. Number of Cases (Numerator). Date on which reported (Denominator).						Date from which no new Cases were reported.					
	Carried over from last report.	Fresh cases.	Cured.	Deaths.	Carried over to next report.	Typhoid fever.	Typhus.	Smallpox.	Measles.	Scarlet fever.	Whooping-cough.	Typhoid fever.	Typhus.	Smallpox.	Measles.	Scarlet fever.	Whooping-cough.

District medical officers send their reports not later than three days after the en of the ten-day period, and provincial medical officers within fifteen days of the end o that period. The Department of Infectious Diseases draws up a ten-day report on th situation with regard to infectious diseases in the country. This report is transmitte to the Director of Public Health, to the Health Organisation of the League of Nations, t the Office international d'hygiène publique, and to the Ministry of Public Health a Belgrade.

The Directorate of Public Health draws up a monthly report, which is communi cated to all the health administrations which exchange health intelligence with Bulgaria

The Directorate of Public Health also publishes quarterly, half-yearly and annua bulletins. All cases of virulent disease are notified by telegraph to the Directorate. A the end of every month it also receives a telegraphic report on the number of case reported and the places at which the first cases were notified.

The Infectious Diseases Department receives telegraphic information as to the spread of infectious diseases which have assumed an epidemic form. At the beginning of each week it publishes a weekly report on virulent diseases which have assumed an epidemi character, and a provisional weekly report which is a summary of the former. These two reports are transmitted to the General Medical Council. In addition, the first i communicated to the Ministry of Public Health at Belgrade, and the second to th twenty-two States and sanitary institutions with which Bulgaria exchanges epide miological intelligence.

The district and provincial medical officers also render annual reports. The medica officers of communes are obliged to forward their annual reports to their district medica officers by February 15th at the latest ; the district medical officers send their annua reports to their provincial medical officers not later than March 1st.

These reports contain :

(a) A list of cases of infectious disease reported during the year ;

(b) A list of cases of chronic infectious disease and other epidemic diseases.

The annual report of the Infectious Diseases Department contains the following tables :

(a) Number and percentage cases of acute infectious diseases notified in each province ;

(b) Number and percentage of cases of each acute infectious disease ;

(c) Number and percentage of cases of acute infectious diseases for each month in the year ;

(d) Number and percentage of cases of each acute infectious disease reported in each month in the year.

Chronic infectious diseases are tabulated in the same manner.

The annual report of the Infectious Diseases Department is included in the general report of the Directorate of Public Health, which is published at frequent intervals.

Standardisation of Sera, Serological Reactions and Biological Products :

REPORT ON THE INTERNATIONAL CONFERENCE ON THE STANDARDISATION OF SERA AND SEROLOGICAL TESTS, convened by the Health Committee of the League of Nations and held from December 12th to 14th, 1921, at the British Ministry of Health, London. (French and English texts.) (C. 533. M. 378. 1921. III.)	1/6	$0.30
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Dr. W. CHODZKO,	Former Polish Minister of Health; Director of the School of Hygiene, Warsaw.
Dr. A. GRANVILLE,	Late President of the Sanitary Maritime and Quarantine Council, Alexandria.
Professor Ricardo JORGE,	Director-General of Public Health, Lisbon.
Dr. A. LUTRARIO,	Late Director-General of the Health Department at the Ministry of the Interior, Rome.
Dr. P. MIMBELA,	Professor of the Faculty of Medicine, Lima.
Professor B. NOCHT,	Director of the Institute for Tropical Diseases, Hamburg.
Professor Donato OTTOLENGHI,	Professor of Hygiene at the Royal University, Bologna.
Dr. L. RAYNAUD,	Inspector-General of the Health Service, Algeria.
Dr. M. TSURUMI,	Representative of the Japanese Public Health Service.
Dr. L. RAJCHMAN,	The Medical Director, Secretary of the Committee.
Absent:	
Surgeon-General H. S. CUMMING,	Director-General of the United States Public Health Service, Washington.
Dr. Alice HAMILTON,	Associate-Professor of Industrial Hygiene, Harvard Medical School, Boston.
Professor Gustavo PITTALUGA,	Professor of the Faculty of Medicine, Madrid.

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ANNEXES 14

FIRST MEETING

Held at Paris on Saturday, June 19th, 1926, at 10.30 a.m.

Present: All the members of the Committee, with the exception of Professor Chagas, Surgeon-General Cumming, Dr. Alice Hamilton and Professor Pittaluga.

235. Welcome to Professor Ottolenghi.

The PRESIDENT, in the name of his colleagues, extended a cordial welcome to Professor Ottolenghi.

236. Notification of Epidemic Diseases provided for in Article 1 of the International Sanitary Convention of 1926: Draft Agreement submitted by the Bureau of the Office international d'hygiène publique and the Health Committee of the League of Nations to the Two Committees.

The PRESIDENT recalled that a week previously the members of the Health Committee had met in private to examine a note submitted to its President by M. Velghe on behalf of the Sub-Committee of the Office international, which had studied the question of the procedure to be followed with regard to the notifications provided for in Article 1 of the International Sanitary Convention which had just been concluded. It had been decided that the two bureaux and the two directors should examine in common the possibility of drawing up a draft agreement. The two directors, in concert with the President of the Office international and the President of the Health Committee, had drafted a note (Annex 106), which had been distributed to the members of the Committee a week previously. The proposals contained in it could, he thought, be accepted by the Health Committee.

Dr. TSURUMI, with regard to the arrangement concluded between the Office international and the Health Committee on the notifications provided for in the Convention, thought that the Health Committee had already agreed unofficially, a few days previously, to the note prepared by the Bureau. Dr. Tsurumi had already informed the Committee on several occasions that this arrangement was of primary importance from the point of view of the Convention as far as his own country was concerned. Without such an arrangement, he feared that it would be very difficult for Japan to adhere to the Convention. He urged the Committee therefore to accept officially the note of the Bureau. He would then, if the Committee agreed, ask the President to be good enough to take the necessary measures to put this arrangement into execution as soon as possible.

Sir George BUCHANAN asked whether the proposal which had just been made meant that the draft agreement would be adopted in the name of the whole Health Committee.

The PRESIDENT replied in the affirmative.

Sir George BUCHANAN felt unable to advise the Health Committee to go so far as was proposed. The question had been discussed the day previously by the Permanent Committee of the Office international, at which the majority of the Committee, including himself, had agreed that the terms of the draft agreement should be examined in greater detail before they could even provisionally be accepted. He did not think it necessary to take up the time of the Committee by repeating the observations which he had made on the previous day. It was particularly important that the Office international should have the opportunity of fully working out the procedure which it was best to adopt in order that the different new obligations which it would have under the revised Convention should be properly fulfilled. For countries with large maritime commerce and large health interests, such as Great Britain, this could not be settled in a hurry. Some of the principles of co-ordination underlying the scheme of the bureaux appeared to him reasonable and he was in complete sympathy with the idea that the Health Organisation should co-operate in the execution of the Convention. But, as he had pointed out on the previous day, a good agreement could only be reached after the Office international had taken its decisions on the way in which the work entrusted to it had best be done, which meant that for the moment he could not accept the draft agreement.

The provisions of the new Convention had only just been drafted and had not yet been signed, and those which related to the Office international would have to be examined at leisure, not only by themselves but also in relation to the intentions of the Convention as a whole. The question had been discussed on the previous day when the new Director of the Office international had been appointed. The latter had been instructed, as a first duty, to investigate in detail the various parts of the Convention and to submit a report to the Office international during its October session. Until he was in a position to examine that report, to obtain its consideration by his own Government, and to discuss the matter with the delegates of other Governments when the questions had been put fully before them, he could not recommend the

acceptance of the draft agreement. He was quite ready, however, to take the draft agreement as a document to be utilised for further discussion when the proper time had arrived.

Professor Léon BERNARD regretted that he had not been able to hear the explanations given on the previous day by Sir George Buchanan. He had understood at the last meeting that all his colleagues on the Health Committee had already agreed to accept as a basis of discussion the draft agreement which the two bureaux had collaborated in drawing up. A basis of agreement was easy to find with a little good-will, but if the decisions of principle which had already been taken were now called in question there would be no reason why the problem should be solved in October or later. If an agreement could not be reached, the two organisations would be reduced to working separately. He would like to have further information from M. Velghe.

M. VELGHE said he had no intention of taking part in the discussion because of his somewhat delicate position as President of the Office international, all the more so as the Health Committee had not yet taken a decision on a basis of agreement. He felt compelled, however, to accede to the desire of Professor Léon Bernard and thought, moreover, that the statement of Sir George Buchanan had resulted from a misunderstanding. Sir George Buchanan had said that he could not consider the draft agreement as being more than a basis of discussion. It was precisely as a basis of discussion, however, that the draft agreement had been submitted to the Health Committee and on the day previously to the Permanent Committee of the Office international.

The Health Convention contained provisions which represented an extension of the work of the Office international, but it had been immediately laid down that the Office international could make arrangements with other organisations in order to fulfil its new duties. Personally, he had been urged on various sides to press for the adoption as soon as possible, that was to say at the present session, of a basis of agreement. Numerous delegations, especially the Japanese delegation, had desired to see the arrangement inserted in the text of the Convention. In any case it was a legitimate desire to know as soon as possible the meaning of this agreement for two reasons which had been explained at a previous meeting. It was necessary that each member should be able to inform his Government without delay in what manner the Office international and the Health Committee understood the arrangement which had been made. It had been emphasised that it was all the more useful to ascertain the terms of the draft agreement — for it was only a draft — since this document, once known, might have exercised an influence on the terms of the Convention.

It was actually the fact that a member of the Office international had considered that the draft agreement was opposed to a provision of the Convention stipulating that the agreement ought not to allow the substitution of one organisation for another. It had always been the general agreement that the Epidemiological Intelligence Service of the League of Nations should be kept intact. The gravity of the position could be realised. As some thought that the draft agreement was opposed to the Convention, some Governments might hesitate to sign the Convention itself. For this reason it had been thought desirable that the two Committees should reach agreement on a draft which could be discussed in October in order to prevent misunderstanding. The two Offices, together with the two Directors, the Chairman of the Committee of the Office international and the President of the Health Committee, had reached agreement on a draft and had done everything possible to obtain its adoption. The Office international, however, had refused to discuss this draft, though this did not mean that it had rejected it, but that it desired to examine it in October after it had had time to study the text of the Convention and to consult Governments.

Sir George Buchanan was of opinion that the draft should be adopted as a basis of discussion, but it was precisely this step which the Office international had been asked to take on the previous day. If the views of the various delegates had been ascertained, they would have been able to submit a text to their Governments, informing them that it would be proposed as a solution in October. Delegates would not have been bound by their vote and it would still have been possible in October to have made any amendment of the draft agreement which they thought best.

After the negative decision taken on the previous day, it was difficult to understand in what manner it would be possible to submit to Governments a proposal which in fact no longer existed. There remained the draft of the Medical Director, but that draft had not been very warmly received by certain members. Nevertheless, the solution which he had himself proposed had been very simple. The draft agreement, just as any other question, would have been preliminarily discussed by the Office international. Once it had been adopted, it would have been submitted to Governments and it would then have been referred a second time to the Office international.

He would state, in answer to the question put by Professor Léon Bernard, that he did not understand the misunderstanding which had occurred. There had been a refusal to discuss the text although it had been stated in advance that any decision taken on that text would not bind delegates.

Professor Léon BERNARD thanked M. Velghe. What had occurred could only be explained by the absence of a desire to reach an agreement. The position of everyone must be perfectly clear. In passing, he desired to rectify a statement of M. Velghe regarding the draft of the Medical Director. At the preceding unofficial meeting of the Health Committee, the draft had received the assent of all the members, including Sir George Buchanan.

M. VELGHE pointed out that the members at the preceding meeting had taken a decision, not on the draft agreement, but on a note, and it was upon that note that the draft had been based. The two documents resembled each other in the spirit if not in the letter.

Dr. RAJCHMAN explained the procedure. What was the position of the Health Committee of the League of Nations ? As he had recalled, a draft, drawn up by a Committee of the Office international concerning the co-operation of the two organisations in the fulfilment of the duties imposed by the Convention (Article 7) on the Office international in respect of epidemiological and other information had been circulated some days previously to members of the Health Committee.

During an unofficial meeting, a note prepared by the Medical Director in agreement with the Bureau of the Health Committee had been discussed. That note had been accepted by members who had attended the meeting, but, as it had been unofficial, it had not been possible for it to be adopted officially. On the basis of that note, a draft agreement with the Office international, agreed to by the Director of the Office international, had been drawn up. That agreement had been approved by the two Presidents. The question regarding the date on which that agreement or any other agreement should be concluded with the Office international concerned, not the Health Committee, but the Office international itself.

At the present stage, it would be useful if the Health Committee stated that it approved or disapproved of the agreement in order that the Office international, when the question came up again for consideration, might know the views of the Health Committee. He thought therefore that, during the present official meeting, the draft agreement should be discussed paragraph by paragraph in order that any objections might be foreseen.

Sir George BUCHANAN, in reply to Professor Léon Bernard, thought that to adjourn the discussion would in no way retard indefinitely the conclusion of a suitable agreement. During the previous week, at the unofficial meeting of the members of the Health Committee, he had expressed the view that definite proposals from the Committee would only prove of use when the Office international had formulated its requirements. This the Office was about to do. The new Convention could not come into operation this year, and it raised such important questions as regarded the future that the delegates to the Office international needed time to appreciate the exact scope of the Convention and consult their Governments if it were desired to submit useful suggestions to the Health Committee in October. This was the first reason why Sir George Buchanan considered that there was no objection to adjourning the question until October. There was a second reason, to which he had already alluded. The Office international possessed a new Director and it was only fair to give him time to take up his duties and submit a report on which the Committee might express a carefully considered opinion at its next session.

He noted that the draft agreement seemed to go further than the original note of the Medical Director in the sense that it covered questions too complex to be decided upon at the moment. For example, Article 7 of the Convention, to which the draft agreement alluded, and which dealt with rat plague, implied the establishment of all the necessary machinery not only for the transmission of information, but also for its collection, and so large a question as this could not be settled out of hand without examining all its aspects. Certain delegates had pointed out that it would be useful to take a decision before the meeting of the Assembly, but was it wise, or helpful to the solution they desired, to submit to the Assembly, as adopted, a draft which had not yet been examined by the Permanent Committee of the Office international, upon which the various Governments were represented ? If the Assembly were to give previous approval to this draft, the position of technical official delegates at the Office international would be made very difficult.

The PRESIDENT asked his colleagues if they agreed to adjourn their decision or whether they desired to discuss the draft agreement paragraph by paragraph. He thought that the majority desired to begin the discussion immediately.

Sir George BUCHANAN persisted in his opinion that the Committee would be in a far better position to discuss the draft later when it had more information before it. Obviously, however, he had no intention of opposing an immediate discussion if his colleagues desired to adopt such a procedure.

The PRESIDENT opened the discussion on the draft agreement.

Title :

The words " Draft Agreement " were replaced by the words " Preliminary Draft Agreement ".

Preamble :

No observations.

Paragraph 1.

The PRESIDENT asked Sir George Buchanan whether he had any observations to make.

Sir George BUCHANAN replied that the question was very important, but that he was not yet in a position to discuss it.

Paragraph 1 *was adopted.*

Paragraph 2.

Adopted.

Paragraphs 3 and 4.

Dr. RAJCHMAN noted that Sir George Buchanan had made a very important observation at the beginning of the meeting when he had stated that the present preliminary draft alluded to the former Article 7 (now Article 6 in the final text of the Convention) concerning rat plague. In the view of Sir George Buchanan, the introduction of this reference into the preliminary draft went beyond the terms of the note which had been examined at the unofficial meeting. This was a question which, in the view of Sir George Buchanan, ought either to have been left to the Office international or else discussed in greater detail. He would be very grateful to Sir George Buchanan if he would explain the scope of his objection, but he thought that a misunderstanding had arisen.

In paragraph 3 as well as in paragraph 4, the preliminary draft made provision solely for publication, by the Epidemiological Information Service, of information to be submitted to it by the Office international, but the Epidemiological Information Service had no responsibility with regard to the information sent to it for publication in the *Weekly Record*, etc. By the terms of paragraph 1, the duty of the Epidemiological Service was to communicate to the higher health authorities such notifications as were forwarded to it. By the terms of paragraphs 3 and 4, the Service undertook to publish in its *Weekly Record*, etc., reports submitted to it by the Office international on the responsibility of that office and drawn up in such a manner as the Office international might decide. In those circumstances, he did not quite understand the objections of Sir George Buchanan.

Sir George BUCHANAN, with regard to Article 6 (formerly Article 7 of the Convention), recalled how difficult it was to detect the presence of rat plague and, once its presence was discovered, to draw any definite conclusions on its intensity or infective ability to man. He thought that too much importance had been attached to the question of notifying rat plague, as though that disease were on the same footing as human plague. In his view it was for the central organisation established to satisfy the needs of the Convention, that was to say for the Office international, very carefully to investigate these various questions in order to decide in what circumstances and in what manner the countries in general, or perhaps only neighbouring countries, should receive information on cases of rat plague. Detailed decisions of procedure on these points were essential if reasonable measures were to be adopted in conformity with the terms of the Convention. In this and other matters, the draft agreement was too much concerned with the mechanism and too little with the product. Was it likely that a bureau of the League could act as a mere transmitter of information to and from the Office international ? It could not do this without also being a collector, without sorting and analysing its information, without corresponding with port sanitary authorities, without reporting or even criticising. He did not wish for the moment to express a decided opinion on the solution of these various questions, but repeated his plea for time and the absence of any practical need for haste.

Dr. RAYNAUD pointed out that the difficulties of notifying rat plague were no greater than those concerning the notification of human plague. The *Weekly Record* of the League of Nations was already publishing every week notifications of human plague, cholera, etc. What was asked was simply that the cases of rat plague should be added, and this request had been made by the United States and he thought also by Great Britain. He did not see what difficulties there would be which would prevent the League from publishing information submitted to it. The significance of information regarding epidemics of plague among rats would be no better appreciated at the end of six months than it was at that moment. A solution must be reached.

Dr. LUTRARIO said that he quite agreed with Dr. Raynaud. He suggested various formal amendments with the object of making clearer the wording of paragraphs 3 and 4. More particularly in paragraph 3 he proposed that the first sentence should read : " Information communicated as provided by Articles . . . shall be immediately forwarded by these bureaux to the Office international d'hygiène publique and to *the Epidemiological Service of the League of Nations.* " Without this addition the Epidemiological Information Service could not fulfil the duties entrusted to it by paragraph 4.

Dr. RAJCHMAN thought that it was obvious from the spirit of the agreement that the information communicated would be forwarded to the Epidemiological Information Service by virtue of the provisions of paragraph 4. He thought that there was a misunderstanding between Dr. Raynaud and Sir George Buchanan. Sir George Buchanan demanded that responsibility for the execution of all the articles concerning rat plague should remain with the Office international. This ought to be clearly understood and he would be glad to meet Sir George Buchanan in the drafting of paragraphs 3 and 4. These should clearly state that such should be the case. Information communicated to the regional bureaux would be forwarded to the Office international, which would do what it liked with the information and should decide in what form it should be published in the *Weekly Record.*

Dr. CARRIÈRE agreed with the Medical Director.

M. VELGHE explained the scope of paragraphs 3 and 4 as follows: Paragraph 3 showed merely in what manner communications sent to the regional bureaux in virtue of Articles 4 and 6 of the Convention would be dealt with. Such information would be forwarded to the Office international, and at the same time to the health administrations with whom the regional bureaux were in touch. It was in this way, in fact, that the Bureau at Singapore dealt with the information it now received; it would immediately forward the information to the

Office international as well as to the various health administrations. The Office international would inform the Service at Geneva that it would be required to publish in its *Weekly Record* a particular piece of information in conformity with paragraph 4. Paragraph 3 should therefore logically come before paragraph 4.

Sir George BUCHANAN said that, as he was compelled to leave the meeting on official business, he thought it might be convenient if he were permitted to make the following declaration:

"I am entirely in accord with the principle of making an agreement with the Office international which will facilitate the communication of information required under the Convention by means of the Health Organisation of the League of Nations. Such arrangements can obviously be of the greatest possible value. I accept this 'avant-projet d'accord' therefore as a useful basis for the discussion which, I hope, will take place at an early date as soon as the Committee of the Office international, which is primarily responsible for all the arrangements to be made under the Convention, has decided on the main lines on which it should proceed to carry out its new duties under the Convention when that document comes into operation."

The PRESIDENT thanked Sir George Buchanan.

(Sir George Buchanan then withdrew.)

M. VELGHE said that he would have to abstain from voting on the preliminary draft agreement. He could neither vote against it, since he had approved it, nor vote for it since the Committee of the Office international had not taken a decision.

The preliminary draft agreement was approved with formal amendments and the Committee adopted (M. Velghe abstaining) the following resolution submitted by Professor Léon BERNARD:

"The Health Committee, having considered the terms of the preliminary draft submitted by the Bureaux of the Office international d'hygiène publique and the Health Committee of the League, approves the following text, which is the outcome of its deliberations:

"The Permanent Committee of the Office international d'hygiène publique and the Health Committee of the League have agreed on the following procedure, which they consider to be the most effective to ensure the centralisation and distribution of information concerning epidemic diseases and sanitary measures which are contemplated by the Paris International Convention of 1926.

"1. The notifications provided for in Article 1, and intended for the Office international d'hygiène publique, may be transmitted by Governments through one of the League of Nations regional bureaux.

"These bureaux shall at once communicate such notifications, by telegram or wireless, to the Office internationale d'hygiène publique as well as to all the health administrations with which they are in direct relations.

"The notifications thus received shall be communicated forthwith by the Office international d'hygiène publique to the diplomatic agencies in Paris.

"2. The immediate communication to the principal health authorities provided for under Article 3 of the Convention shall be effected in the name and on behalf of the Office international d'hygiène publique by the Epidemiological Intelligence Service of the League of Nations. All notifications forwarded to the Office international d'hygiène publique either directly or through the other regional bureaux shall be communicated immediately to this Service.

"The immediate communication of these notifications to principal health authorities shall be effected by this Service in the name of the Office international d'hygiène publique, by telegram or wireless, as frequently as may be necessary.

"3. The communications provided for in Articles 2, 3, 4, 6, 9, 12, 14, 16, 28 and 49 of the Convention, received direct by the regional bureaux of the League of Nations, shall be forwarded immediately to the Office international d'hygiène publique as well as to all the health administrations in direct relationship with those Bureaux.

"4. The first page of the *Weekly Summary* and of the periodical publications, of the Epidemiological Intelligence Service of the League of Nations will give in the name of the Office international d'hygiène publique, the official bulletin of notifications and of intelligence, as provided for under Articles 2, 4, 6, 9, 12, 14, 16, 28 and 49 of the Convention and as communicated beforehand by the Office."

237. Interchange of Health Personnel in West Africa: Provisional Report of Dr. Destouches.

Dr. RAJCHMAN said that Dr. Destouches had just returned from West Africa, where he had undertaken the difficult task of arranging the tour of the participants in the interchange. The Medical Director had asked Dr. Destouches to take advantage of his journey to enquire into the possibility of establishing a bureau of Epidemiological Information in West Africa. Dr. Destouches had carried out this enquiry and, at the same time, had discussed the question with various health administrations and with the participants in the interchange. The Health Committee would probably desire to examine more in detail the provisional report submitted by Dr. Destouches while reserving its final decision for the October session.

The provisional report on the Interchange of Health Personnel in West Africa was read.

The PRESIDENT, in the name of the Committee, congratulated Dr. Destouches. He thought the study tour carried out in Africa might result in the establishment of an office similar in some respect to that at Singapore, which would mean that the tour had been of great importance.

Professor Léon BERNARD associated himself with the observation of the Chairman. He was particularly struck by the passage in the report concerning the School of Medicine at Dakar. He asked Dr. Destouches to give details, either in his final report or in a special note, regarding this school of medicine. As a member of the Committee on Public Health Instruction, he hoped to derive great profit from such information. Was the establishment a school of general or tropical medicine ?

Dr. DESTOUCHES undertook to furnish the information requested. The School of Medicine at Dakar was a school of general medicine established on the same plan as the French schools. It delivered permits to natives to practise medicine, but not a doctor's diploma. Natives possessing such authority were required to remain in the service of the Administration for ten years.

Dr. GRANVILLE stated that about three years ago, he thought, a somewhat similar medical school had been established at Khartoum to train native medical officers for practice in outlying districts. These were supposed to be partly trained medical men; something similar, he believed, used to exist in France in bygone days — " officiers de santé ". The students, he thought, had four years' instruction and were then bound to work for the Government for a period of years, after which they could return to the school and qualify fully for medical men. It would be useful, in his opinion, to obtain from the Sudan Administration details of the progress of the institution.

The Committee decided to examine at its next meeting the provisional report on the French proposal concerning the establishment of an Epidemiological Bureau in West Africa.

SECOND MEETING

Held at Paris on Sunday, June 20th, 1926, at 11 a.m.

Present: All the members of the Committee, with the exception of Dr. Carrière, Surgeon-General Cumming, Dr. Alice Hamilton and Professor Pittaluga.

238. Request of the Turkish Government for Three European Sanitary Advisers : Letter from the President of the Office international d'hygiène publique.

A letter sent on June 9th, 1926, by the President of the Office international to the President of the Health Committee was read (Annex 107). This letter concerned the appointment provided for by the terms of the Declaration of Lausanne of July 24th, 1923, of three European medical experts to be advisers to the frontier Turkish Health Administration. To that letter was attached a communication dated April 30th, 1926, from Fethy Bey, Turkish Ambassador in Paris, stating the conditions on which the Ministry of Health and Social Assistance in Turkey desired to appoint three medical advisers.

Dr. GRANVILLE noted that the Turkish Government offered the medical advisers six weeks' annual leave. It would be preferable, as was the custom in the Egyptian Administration, to allow two months' leave a year and to allow the medical advisers the right not to take their leave every year, but to accumulate three and a-half months of leave in two years. It was suggested that the Office international should be asked to take account of this point in its reply to the Turkish Government.

The PRESIDENT thought that this suggestion might be borne in mind when appointing the medical advisers.

Professor Léon BERNARD wondered whether the Committee should not accept without change the observations of the Office international on the proposals of the Turkish Government in order to gain time and not compel the Office international to return to the question at its October session.

M. VELGHE thought that, if there were not any serious divergence of view between the Office international and the Health Committee and if the proposed amendments to the observations of the Office international only concerned points of detail such as that raised by Dr. Granville, it would not be essential for the Office to take any further decision. Both organisations could submit any observations they thought fit. When the Committee had replied to the Office international, he was ready to inform the Office verbally of the observations made in the Committee in order that they should be submitted in the name of both organisations.

With reference to paragraph 7 of the conditions laid down by the Turkish Government, he explained that, according to the Declaration of Lausanne, the medical advisers were to be chosen by that Government, which must naturally have the right to dismiss an official who did not give satisfaction. It was in this sense that the Office international, in its observations, had expressed the view that such a condition was superfluous. The Turkish Government might replace an official who had been dismissed by choosing one of the three other persons whose names remained on the list of six drawn up by the Health Committee and the Office international. It was mainly because of this condition imposed by the Turkish Government that the Office international considered the salary of 300 Turkish pounds proposed for the medical advisers to be insufficient.

Dr. GRANVILLE feared that the terms of condition No. 7 laid down by the Turkish Government to the effect that the retention or dismissal of these advisers depended on the " competent department " might prove an insufficient guarantee for the advisers nominated.

M. VELGHE saw no objection to the Committee's mentioning such a point. He would remind it, however, that it was formally laid down in the Declaration of Lausanne that the doctors in question would be Turkish officials and would be responsible to the Turkish Minister of Health. The Health Committee was not compelled to agree without discussion to the proposal put before it by the Committee of the Office international. The Health Committee might make reservations or ask for further details.

Professor Léon BERNARD recalled that it was on the proposal of the Office international and of the Health Committee that the Turkish Government would proceed to make the appointments and suggested that the Turkish Government should be asked, if dissatisfied with one of the officials selected, not to take any decision with regard to him except with the assent of both these organisations. It would perhaps be wise to introduce such a saving clause.

Dr. GRANVILLE suggested a clause worded to the following effect: " The Turkish Government can dismiss a medical adviser on payment of the remainder of his salary."

Dr. RAJCHMAN recalled that the matter had been discussed in detail by the Permanent Committee of the Office international. It was important to note that a representative of the Turkish Government had attended that meeting, as a Turkish delegate sat on the Permanent Committee. It would be preferable to adopt without change the observations of the Permanent Committee, and that for two further reasons:

1. As M. Velghe had pointed out, the Declaration of Lausanne was formal on this point and there was no appeal from it. It stated that the medical advisers would be responsible to the Health Minister and not to the Health Ministry.
2. It appeared very doubtful that the Turkish Government would proceed to the appointment of three medical advisers. The Turkish delegate to the Office international had pointed out that the salary of £600 requested for the medical advisers would exceed the salary of the Turkish Prime Minister. From this it would appear that the discussion was mainly of a theoretical nature and that the Committee should avoid wounding the legitimate susceptibilities of the Turks.

The PRESIDENT proposed that the text of the observations of the Office international should be adopted, together with those made during the discussion.

Dr. GRANVILLE thought that, if the Declaration of Lausanne contained the reference to which allusion had been made, it was inadvisable to add the additional clause now under discussion. The Committee should remember that the medical advisers to be selected would accept their posts under the responsibility of the Health Committee and the Office international and would thus believe themselves secure from arbitrary treatment. If the Health Committee and the Office international did not take precautions, they would be somewhat failing in their duties and somewhat careless of their rights.

Professor Léon BERNARD pointed out that in the observations on condition No. 7 the term " superfluity " was incorrect, for it appeared to strengthen the position taken by the Turkish Government.

M. VELGHE proposed that it should be stated that condition No. 7 was " opposed to the Declaration of Lausanne ".

Dr. GRANVILLE accepted this proposal.

The commentaries of the Office international were approved.

239. French Proposal concerning the Establishment of an Epidemiological Bureau in West Africa : Preliminary Report of Dr. Destouches on the Enquiry concerning this Proposal.

The preliminary report of Dr. Destouches was read.

The PRESIDENT opened the discussion on the report.

With regard to the forwarding of information by wireless, Dr. DESTOUCHES said that, at present, wireless was not used commercially in Africa. Perhaps this method of forwarding information

might be utilised for official information, but in view of the climate it was impossible to transmit news by wireless during nine or ten months of the year between the hours of 2 p.m. and nightfall, except in the case or the most powerful stations, situated at Bamako, Brazzaville and the Cape, where the operators could receive communications if they were despatched at a fixed hour.

Dr. RAYNAUD pointed out that a system of wireless stations had been established between Algeria, Tunis, Morocco, Southern Algeria and Tunisia, and that it was working in a satisfactory manner. The administrations were so interested in the proposed organisation that they would certainly agree to forward sanitary information by wireless. There were, moreover, other important posts in addition to those which had just been mentioned.

Dr. RAJCHMAN explained that the question of forwarding information by wireless had been discussed in detail at Singapore and, without knowing the conditions in Africa, he could confirm what had been said by Dr. Destouches. The future of wireless was considerable, but it would be dangerous to make this method the sole means of transmission except in the case of very powerful stations. As far as the Far East was concerned, there were only three or four health administrations which regularly received information by wireless. Information could not be obtained, however, by this means either at Hong-Kong, Manila or even at Singapore. This was explained to a great extent by reasons of climate. With certain exceptions, wireless stations could only receive communications at fixed hours. It was certain, moreover, that in a more or less near future wireless could be used, and an attempt should be made to do so. In conformity with the suggestions which had been made, the Medical Director favoured the establishment of a provisional centre of study. The various questions which the problem raised could only be regulated after experiment.

Professor Léon BERNARD noted that the Committee was, generally speaking, agreed as to the usefulness of establishing a Pan-African Bureau as well as a provisional organisation of an experimental kind. On the other hand, no decision had been taken as to the central headquarters of that organisation. Was it for technical reasons that the report proposed Marseilles ? At first sight he thought that, for a Pan-African Bureau, the site of Algiers, situated on the Mediterranean and connected with the principal African centres, was the one to be chosen.

Dr. GRANVILLE recalled that the question interested a large number of countries—England, Belgium, France, Portugal, etc. So far as the Singapore Bureau was concerned, the first step had been to consult the Governments on the establishment of the bureau. Had the same step been taken with regard to the African Bureau ?

Dr. RAJCHMAN replied that the Governments were being consulted. The same procedure had been followed as in the case of the Singapore Bureau, and the Secretary-General had sent a circular letter to the various Colonial Ministries asking for the views of the Colonial Health Administrations. Only one or two replies had been received. The Health Committee had further decided to use the interchange visit to West Africa for the purpose of the enquiry. With this object, the views of the participants had been asked for at the final conference, though they had not been Government delegates. At the same time, Dr. Destouches had investigated the question with the help of the Health Administrations of the colonies visited. It had been thought well, because of the very great interest of the scheme, to keep the Committee informed as to progress made, without loss of time. From the information obtained by Dr. Destouches and from the opinions expressed by the participants in the interchange, some of whom had consulted their administrations, it appeared that there were difficulties in the way of taking an immediate decision on the establishment of a bureau, whether that bureau should be established for West Africa or for the whole of Africa. There were also difficulties with regard to the official headquarters of the organisation. Obviously, an experiment must be made. What was the information to be collected ? What value was to be given to it ? In what way would it be collected and distributed ? Perhaps an experiment lasting eight or nine months would be necessary before taking a final decision. He thought it would be logical to begin the investigations in a port on the Mediterranean which was easily accessible. The choice of Algiers would be a happy one.

Dr. GRANVILLE was strongly in favour of this proposal. Account should be taken of African susceptibilities.

Professor JORGE said that Portugal followed with very great interest the interchange visit in West Africa, in which its most important colony was situated. This visit had given the greatest satisfaction in all Portuguese circles, and he expressed his gratitude to the organisers, the Medical Director and Dr. Destouches.

With regard to an Epidemiological Bureau for Africa, he agreed with the report of Dr. Destouches. From the Portuguese point of view, he regretted that the idea of a bureau for West Africa was abandoned, but he recognised that a Pan-African Bureau would have a larger field of work and would obtain the adhesion of a great number of African and European States. As far as the choice of headquarters was concerned, he thought that, if Dakar were not to be chosen, a port on the Mediterranean should be selected. Algiers was particularly suitable from all points of view. This was his personal opinion, but he would have to make a reservation since he had received no instructions from his Government, which took a keen interest in the question as far as its colonies in West and East Africa were concerned.

The future bureau ought not to be established on the same model as the Singapore Bureau. It should be a centre for all African pathology, and its creation was necessary and would reflect credit on the Health Organisation. The Committee should pay less attention to the idea of collecting frequent and rapid epidemiological information than to that of collecting statistics on African epidemiology and pathology.

Professor CANTACUZÈNE supported Dr. Granville. It was important for the bureau to be established in a centre where African pathology was being investigated, and as far as this was concerned no centre could compare with Algiers.

Sir George BUCHANAN said that, although he had not had occasion to discuss the results of the interchange tour with the British medical participants, or to see their reports, he was sure that the impressions which he would obtain would be as favourable as those of Professor Ricardo Jorge. The Health Services concerned would certainly be under a great obligation to the Health Organisation, particularly to Dr. Destouches, who had evidently worked very hard to make this interchange visit a success in the face of numerous difficulties.

As regards the bureau, he had been struck by two ideas of primary importance which had come to light during the discussion: Ought the future office to be a scientific centre or a centre for the distribution of information for immediate administrative requirements ? Such were the two aspects of the question and the administrations concerned should be the first to examine them in detail. It might be very useful to conduct an experiment which would show how the scheme would work out, but for this experiment also it would be well first to obtain all possible opinions. Could the provisional report of Dr. Destouches be communicated to the departments concerned in the various countries or was it strictly reserved for the members of the Committee? In the second case, a special report could be drawn up to be sent to Governments with a view to making it possible for the Committee to take a final decision.

Dr. RAJCHMAN agreed with Sir George Buchanan. The Committee could not immediately take a final decision, first because of the enquiry still in progress among various Health Administrations, and secondly because the Committee had not been authorised by the Council to choose a centre. In the case of Singapore, it had been the prerogative of the Council to make the choice, but it had allowed the Committee to do so. The Council still had the right to take the final decision in the present case.

Rather than send the provisional report of Dr. Destouches to the Administrations concerned, it would be preferable to forward to them the Minutes of the present meeting or a report on the discussions which had just taken place. The report prepared by Dr. Destouches had been hastily drafted. The final document would have to be drawn up with great care after the views of the Health Administrations had been obtained. A preliminary document would aid Health Administrations to formulate their views, which should be forwarded to the Secretariat through the ordinary channels, and the Committee could take a decision at its next session, for it was probable that the Council, if the question were submitted to it, would show itself favourable and would ask the Committee to proceed to a final choice. The views collected would enable the Secretariat to examine the question in greater detail and to submit to the Committee more definite proposals on the basis of the suggestions put forward. He hoped that Dr. Raynaud would assist in this preliminary enquiry.

Dr. CHODZKO, without being competent to express an opinion with regard to African pathology, could nevertheless form an opinion of the work done by Dr. Raynaud and in general by the French Colonial doctors. No better choice than Algiers could be made, nor could the Committee do better than ask Dr. Raynaud to direct the centre of preparatory studies. Such studies were doubtless necessary before a final decision was taken. He thought the Committee could immediately choose Algiers, for such a decision would not prejudge the question of the final centre.

M. VELGHE thought that the Secretariat should draw up a fresh report for submission to the Health Administrations. This report should contain suggestions and record the views of the Health Committee on the organisation of the bureau, its functions and the choice of the town of Algiers, etc.

Professor Léon BERNARD noted that, at least provisionally, the Committee was unanimously agreed on the following points:

1. The establishment of a Pan-African bureau of a special character, devoted to the collection of scientific information rather than to the despatch of administrative information.
2. The necessity of conducting a provisional experiment.
3. The choice of Algiers as the headquarters of the bureau.

These various points could be included in a special report for submission to the administrations concerned.

Dr. JITTA said that Dr. Carrière had asked him to state, on his behalf, that he would agree to the proposal that Algiers should be chosen as the centre. Personally, without having gone into the question in detail, Dr. Jitta had no objection to this choice. He would, however, raise the financial question. The Singapore Bureau at the end of the five years, during which the Rockefeller Foundation would pay a subsidy, would find some difficulty in continuing. If the field of the Health Committee's activities was enlarged still further, were not obstacles of all kinds to be feared ?

Sir George BUCHANAN said that his provisional opinion was that there would be no difficulty in choosing Algiers as a centre for the purposes of discussion, so that the Committee, instead of talking about a possible "African" bureau, could hypothecate a bureau for African purposes at Algiers. But such a decision would in no way prejudge the decision of Governments on the point whether a centre should be established, and, in the affirmative, what its functions would be. The question remained entirely open until the Governments concerned had made known their views.

With regard to the question of cost, he believed that, as far as the Singapore Bureau was concerned, the Rockefeller Foundation had made a preliminary offer and the Committee had undertaken the enterprise with the knowledge that a considerable sum was at its disposal. Negotiations with the Rockefeller Foundation should not in the present case be begun before the Committee decided what it wanted to do and knew what was the end to be achieved.

Dr. RAJCHMAN was not yet in a position to reply very definitely to the question raised by Dr. Jitta. If later on it was definitely decided to establish a provisional centre at Algiers, it was quite possible that the expenses would be covered by the Health Organisation's ordinary budget. For this reason it was all the more impossible to say at the moment how the future work would be financed. He was convinced, however, that it could be arranged. The Health Organisation had already accomplished more difficult tasks. For the moment he could only say that it would be possible to cover the cost of the experiment in Algiers and that, as far as the provisional bureau was concerned, its expenses would obviously not be too great, especially if it were established on French territory. As far as the future was concerned, a definite proposal should be awaited which would be discussed by the Health Administrations. It would be premature, however, to contemplate a detailed proposal for the moment.

With regard to the document to be communicated to the Health Administrations, he agreed with M. Velghe and Sir George Buchanan in thinking that a short report should be drafted on the basis of the discussion which had taken place and that the report should be submitted to all members of the Committee at the same time as the Minutes of the session. Members of the Committee could, in the eight days following the receipt of this report, submit their observations to the Secretariat.

Dr. RAYNAUD said that, if it had been decided to choose Algiers as a provisional centre, he would be happy to place his staff at the disposal of the Health Organisation. From the point of view of maritime health, an intelligent service existed which could be used. A certain time previously a service of caterpillar traction motor-cars had been used in the south. More and more numerous caravans were connecting North and Equatorial Africa, and it was necessary to take measures to prevent the introduction of Central-African diseases not only as regards men, but also as regards cattle. There existed in Algiers, as had been pointed out, excellent centres of investigation which might assist the work as a whole, and he would be happy to further the future work by getting into touch with those of his profession on the coast with whom he had established relations. In conclusion, he thanked his colleagues for the confidence which they had shown in him.

Dr. MIMBELA congratulated the Committee on the choice of Algiers, which had the advantage of being halfway to the American continent. He expressed his satisfaction with the statements of Dr. Raynaud, whose personality constituted a further guarantee for the success of the scheme.

240. **Date of the Next Session.**

With regard to the date of the next session, Dr. LUTRARIO urged that the tour of the Malaria Committee in Sicily should not be postponed again.

After a discussion, *it was agreed that the tour of the Malaria Committee in Sicily should take place from September 27th to October 11th or 12th. The Health Committee would meet on October 13th in order to make it possible for the Office international to hold its session between October 20th and 30th. If the Agenda of the Health Committee had not then been quite covered, it could complete its session by one or two meetings held in Paris.*

Dr. LUTRARIO said he would get into touch with the Italian authorities with regard to the date chosen for the tour of the Malaria Committee.

LIST OF ANNEXES.

106. Draft Agreement presented by the Bureaux of the Office international d'hygiène publique and the Health Committee of the League concerning the notification of epidemic diseases provided for in Article 1 of the International Sanitary Convention of 1926 14

107. Letter from the President of the Office international d'hygiène publique to the President of the Health Committee concerning the request of the Turkish Government for three European Sanitary Advisers 14

C. H. 478.

Annex 106.

NOTIFICATION OF EPIDEMIC DISEASES PROVIDED FOR IN ARTICLE 1 OF THE INTERNATIONAL SANITARY CONVENTION OF 1926.

Draft Agreement presented by Their Two Bureaux to the Office international d'hygiene publique and the Health Committee of the League of Nations.

The Permanent Committee of the Office international d'hygiène publique and the Health Committee of the League of Nations have mutually agreed upon the following procedure, which they consider to be the most suitable in securing the centralisation and distribution of information regarding epidemic diseases and sanitary measures which are provided for under the International Sanitary Convention of Paris, 1926.

1. The notifications provided for under Article 1 and intended for the Office international d'hygiène publique may be effected by Governments through one of the League of Nations regional bureaux.

These bureaux will at once communicate such notifications by telegraph or wireless to the Office international d'hygiène publique as well as to all health administrations with whom they are in direct relations.

The notifications so received will be communicated forthwith by the Office international d'hygiène publique to the diplomatic agencies in Paris.

2. The immediate communication to the principal health authorities provided for under Article 3 of the Convention will be effected in the name and on behalf of the Office international d'hygiène publique by the Epidemiological Intelligence Service of the League of Nations.

Immediate communication will be made to this Service of all notifications transmitted, either directly or through the regional bureaux, to the Office international d'hygiène publique.

The immediate communication of these notifications to the principal health authorities will be effected by this Service in the name of the Office, by telegraph or wireless, as frequently as may be necessary.

3. The communications provided for under Articles 2, 4 and 7 of the Convention, received direct by the Bureaux of the League of Nations, will be transmitted immediately to the Office international d'hygiène publique as well as to all health administrations in contact with the bureaux.

4. The first page of the *Weekly Summary* and of the periodical publications of the Epidemiological Intelligence Service of the League of Nations will give, in the name of the Office international d'hygiène publique, the official bulletin of notifications and of intelligence as provided for under Articles 2, 4 and 7 of the Convention and as communicated by the Office.

C. H. 486.

ANNEX 107.

REQUEST OF THE TURKISH GOVERNMENT FOR THREE EUROPEAN SANITARY ADVISERS.

Letter from the President of the Office international d'hygiène publique to the President of the Health Committee.

[*Translation.*]

Paris, June 9th, 1926.

As you are aware, under the terms of the Declaration of July 24th, 1923, relating to sanitary matters, which is annexed to the Treaty of Lausanne of the same date, the Turkish Government is to " appoint for a period of five years three European medical specialists as advisers to the sanitary administration of the frontiers. These medical specialists shall be Turkish officials and shall be attached to the Ministry of Health. They shall be chosen by the said Government from a list of six names, prepared in agreement by the Health Committee of the League of Nations and by the International Bureau of Public Health. Their salary, as well as the other terms of their appointment, shall be settled by agreement between the said Government and the two above-mentioned international organisations. "

On October 25th, 1923, the Office international d'hygiène publique received from Ismet Pasha, President of the Council and Minister for Foreign Affairs of the Government of the Turkish Republic, a letter requesting it " to prepare, in agreement with the Health Committee of the League of Nations, the list of six names mentioned in the Declaration of July 24th, 1923". His Excellency stated that he had addressed a similar communication to the Committee of the League of Nations.

In acknowledging receipt of this letter from His Excellency Ismet Pasha, I informed him that the Office international d'hygiène publique was ready to comply with his wishes, but that it appeared essential to determine in advance, in agreement with the Turkish Government, the Office international and the Health Committee of the League of Nations, the salary and other terms of appointment for the advisers to the sanitary administration of the frontiers, as provided in the first paragraph of the Declaration of July 24th, 1923. I added that the fixing by common agreement of the conditions in question was, indeed, indispensable if the Office international d'hygiène publique and the Health Committee of the League of Nations were to prepare a suitable list of six names of medical specialists who would be prepared to undertake the duties referred to in the Declaration of July 24th, 1923. I therefore requested the Turkish Government to be good enough to inform me of the terms of the contract (salary and other conditions of appointment for the three sanitary advisers) which it was submitting for the consideration of the Office international d'hygiène publique and the Health Committee of the League of Nations.

Having again, on April 10th last, brought the matter to the notice of His Excellency the Turkish Ambassador in Paris, through whom Ismet Pasha's letter of October 23rd, 1923, had been forwarded, I received from the Ambassador, on April 30th, 1926, a communication (copy of which is attached hereto), in which the Turkish Government stated the conditions which it would propose for the appointment of the three sanitary advisers.

The Committee of the Office international d'hygiène publique has examined these conditions and I have the honour to communicate to you the observations which they would appear to suggest.

As regards the salary of three hundred Turkish pounds per month named in paragraph 1 of the conditions, this amount does not appear to be sufficient to induce specialists of any standing to sacrifice their present positions for a period of five years.

In the opinion of the Office international d'hygiène publique, it would be impossible to obtain the services of such medical specialists unless they were offered at least six hundred Turkish pounds per month, especially since, under the Turkish legislation, they would not be allowed to practise during the period of the appointment.

Paragraphs 2 and 3 do not call for any observation.

As regards one of the conditions named in paragraph 4, according to which the sanitary advisers would reside " in such places as may be appointed ", it should be remembered that, according to the Turkish Declaration, the sanitary advisers must be attached to the frontier administration of the Ministry of Health. It would thus appear to be natural for them to have their fixed residence in the place where the headquarters of this Turkish Administration are situated. This would not prevent the European advisers from being entrusted with temporary missions, more particularly for the purpose of obtaining information or of carrying out inspections or enquiries, if necessary, in other parts of the Turkish territory.

As regards condition No. 5, concerning the annual leave of six weeks, this period seems too short, if travelling is to be included. It would be more practical to increase the period to two months per annum, including travelling.

There is no objection to the acceptance of condition No. 7, but this clause of the contract constitutes, as was suggested in connection with condition No. 1, an additional reason for increasing the proposed salary for the sanitary advisers to six hundred Turkish pounds.

Condition No. 7 is, in fact, superfluous, while the latter part of the clause would render it particularly difficult to recruit candidates, whose chances of permanent employment would be destroyed, without compensation, if the period were fixed at five years.

There is no objection to the acceptance of condition No. 8.

These are the observations which suggest themselves to the Office international d'hygiène publique in connection with the Turkish Government's reply. I should be grateful if I might be informed of the results of the consideration of this reply by your Committee and should be glad to know whether it concurs in the observations formulated by the Office international d'hygiène publique concerning certain of the conditions proposed by the Turkish Government for the appointment of the three European sanitary advisers.

(Signed) O. VELGHE,

President of the Committee of the Office international d'hygiène publique.

Letter from the Turkish Government to the President of the Office international d'hygiène publique.

[*Translation.*] Paris, April 30th, 1926.

In reply to your letter of the 10th instant, I have the honour to inform you that the Ministry of Public Health and Social Welfare would suggest the following conditions for the appointment of the three counsellors:

1. The salary of each of the counsellors shall be at the rate of £300 (Turkish) per month.
2. Preference should be given to candidates who have carried out special epidemiological studies and have held office under a Public Health Administration.
3. Candidates must know French.

4. The medical specialists in question shall be subject to the same regulations as Turkish officials and shall be attached to the above-mentioned Ministry. They shall reside in such places as may be appointed.
5. They shall be entitled to six weeks' annual leave.
6. As provided in the Turkish legislation, they shall not be allowed to practise medicine in Turkey.
7. Should any counsellor appointed for a period of five years fail to comply with the conditions laid down, the competent department reserves the right to dispense with his services and to appoint a successor in his place for the remainder of the period.
8. A copy of the *curriculum vitæ* of candidates shall be forwarded to the Ministry of Public Health through the Ministry of Foreign Affairs at Angora.

(Signed) A. FETHY,

Turkish Ambassador.

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N° 10

STATISTICS

OF

Notifiable Diseases

in 33 European, 34 African, 24 American,
and 23 Asiatic Countries, and Australasia

for the Year 1925

GENEVA, JULY 1926

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EPIDEMIOLOGICAL INTELLIGENCE

STATISTICS OF NOTIFIABLE DISEASES 1925

No. 10 GENEVA, July 1926

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INTRODUCTION

The *Third Annual Report on the Prevalence of Infectious Diseases throughout the World* is somewhat wider in scope than that of the two previous reports, as it contains, in addition to data for all diseases which are notifiable in each country, for 1925 and preceding years, statistics of births, deaths, infant mortality and deaths from selected causes in large towns. The number of administrations which regularly furnish us with records of all notifiable infectious diseases in their respective countries has increased since the issue of the *Second Annual Report;* the information contained in this volume relates to 69 per cent of the world's population (Europe 99 per cent; Australasia 88 per cent; Africa 82 per cent; America 75 per cent; Asia 53 per cent).

The most important development of the activities of the League's Epidemiological Intelligence Service during 1925 was the creation of the Eastern Bureau at Singapore. The Bureau now receives each week telegraphic information regarding the prevalence of plague, cholera and smallpox and other unusual epidemic disease in 110 ports of Asia, Australasia and the East Coast of Africa. This information is broadcast in code throughout these areas each week and is cabled to Geneva, where it is incorporated in a *Weekly Epidemiological Report* which is sent by mail to all European and North African health administrations. These reports are issued each Friday and relate to the previous week ending Saturday at midnight.

The *Monthly Epidemiological Reports* contain current information regarding the prevalence of thirteen of the most important epidemic diseases. In order to provide a permanent record for future study of the prevalence and movements of epidemic diseases throughout the world, these data, which in some instances of necessity are provisional, are once a year sent for correction to the various countries. The annual report, which also contains all available information regarding infectious diseases of less general interest than those selected for monthly publication, thus contains only revised and in most instances final data.

The health administrations of the following countries, dominions and colonies have kindly verified the tables appearing in this report:

Albania
Algeria
Australia
Austria
Belgium
Bulgaria
Canada
Chile
Costa Rica
Cuba
Czechoslovakia
Denmark
Danzig
England and Wales
Egypt
Esthonia
Finland
Formosa
France
Germany
Greece
Haiti
Hungary
British India
Dutch East Indies
Iraq
Irish Free State
Northern Ireland
Italy
Japan
Korea
Kwantung
Latvia
Lithuania
Luxemburg
Morocco
Mexico
Netherlands
New Zealand
Norway
Panama Canal Zone
Peru
Poland
Roumania
Saar Territory
Scotland
Serbs, Croats and Slovenes (Kingdom)
Shanghai (Intern. Settlement)
South-Manchuria Railway Zone
Spain
Anglo-Egyptian Sudan
Switzerland
Tunisia
Union of South Africa
United States of America
Uruguay
U. S. S. R.

The British *Ministry of Health* has kindly verified the data for the following British Possessions:

Aden
Basutoland
Ceylon
Cyprus
Gibraltar
Gold Coast
Grenada
Guiana
Hong-Kong
Jamaica
Kenya
Malay States (Federated)
Malay States (Unfederated)
Mauritius
Nigeria
Nyasaland
Northern Rhodesia
Southern Rhodesia
St. Kitts and Nevis
St. Lucia
St. Vincent
Sierre Leone
Straits Settlements
Tanganyika
Trinidad and Tobago
Uganda
Zanzibar

The Sanitary Service of the *French Colonial Office* has kindly verified the data for the following possessions and mandated territories:

Cameroons	Gold Coast	Niger Territory
Dahomey	Indian Settlements	Reunion
Equatorial Africa	Indo-China	Senegal
Guadeloupe	Kwangchow-Wan	Sudan
Guiana	Madagascar	Togoland
Guinea	Martinique	Upper Volta

Tables for the Belgian Congo have kindly been furnished by the *Belgian Colonial Office*, for Cyrenaica and Tripolitania by the *Italian Colonial Office*, for Hawaii and Porto Rico by the *United States Public Health Service.*

The tables referring to the following towns have kindly been verified by the respective municipal statistical offices:

Algiers	Leningrad	Paris
Amsterdam	Lille	Rome
Asuncion	Lodz	Sao Paulo
Budapest	Lyon	Stockholm
Copenhagen	Lwow	Strasburg
Cracow	Milan	Teheran
Genoa	Montevideo	Trieste
Guayaquil	Moscow	Warsaw
		Venice

Tables for other towns have been corrected by the health services of the respective countries.

The General Review is intended to attract the attention of readers to outstanding features of the present epidemic situation; it does not pretend to be an exhaustive analysis of the material contained in the report, which would be beyond its scope. Morbidity rates are rarely employed, since readers might be induced to make comparisons which, in view of existing differences in accuracy of notification, might not be justified.

The best thanks of the League of Nations Health Organisation are due to all public health services and statistical offices whose generous and continuous collaboration has made possible the rapid development of a worldwide epidemiological intelligence service.

Geneva, July 15th, 1926.

GENERAL REVIEW

PLAGUE.

Plague was less prevalent during 1925 than during the two preceding years. India remained, as usual, the principal centre of infection, accounting for more than ninety per cent of the plague cases reportedthroughout the world. Provisional returns for India, which are admittedly incomplete, are alone available for 1925, but it is certain that the Indian plague mortality for that year was less than half that of 1924. The number of cases reported in other countries of Asia during the two years 1924 and 1925 was about equal. Plague cases reported in Africa in 1925 numbered about 5,200 as compared with 6,800 in the previous year. A marked improvement of the plague situation occurred in the Mediterranean Basin. The reports on the occurrence of plague received from the various countries are summarised below:

PLAGUE CASES AND DEATHS REPORTED THROUGHOUT THE WORLD, 1922 – 1925

Africa.

Country	1922		1923		1924		1925	
	Cases	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*
Algeria	22	7	6	3	7	2	3	—
Angola	636	42	96	29	66	24	14	8
Canary Islands	—	—	46	27	23	2	10	3
Cape Verde Islands	—	—	56	18	—	—	—	—
Egypt	487	228	1,519	725	377	194	138	77
Gold Coast	—	—	0	0	322	272	3	3
Kenya	274	—	1,090	—	477	—	1,096	—
Madagascar	125	28	698	479	1,661	460	1,742	1,544
Morocco (French)	34	—	134	121	53	3	0	0
Mauritius	98	75	139	118	161	144	74	65
Mauritania:								
Port Etienne	—	—	—	—	11	5	0	0
Nigeria	0	0	5	2	414	344	653	491
Nyasaland	0	0	7	—	4	—	0	0
Senegal	874	490	1,221	846	1,834	1,070	402	235
Somaliland (Italian)	—	—	—	—	82*	28*	—	—
Tanganyika Territory	52	40	39	26	42	35	44	27
Tunisia	8	3	31	—	11	—	12	—
Uganda	1,362	1,305	938	914	616	535	961	882
Union of South Africa	11	8	27	19	400	246	70	40

America.

Argentine Republic	—	—	8	3	14	—	15	—
Bolivia: La Paz	—	—	4	4	10	10	—	—
Brazil:								
Bahia	30	21	16	10	12	7	25	16
Para (State)	—	1	0	0	0	0	—	—
Ceara (State)	0	0	0	0	0	0	—	5
Pernambuco (State)	5	3	16	4	0	0	—	13*a*
Porto Alegre	19	10	22	21	14	11	—	—
Rio de Janeiro	1	1	0	0	0	0	—	—
Santos	—	—	—	—	5	—	2	2

* Period November 9th, 1923-February 1924.
(*a*) For nine months, January-September.

America *(continued)*.

Country	1922		1923		1924		1925	
	Cases	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*
Chile	—	—	—	—	16	1	0	0
Ecuador	56*a*	19*a*	126	42	148	47	124	54
Hawaii	—	12	1	1	—	—	1	0
Mexico	1	—	2	1	0	0	0	0
Paraguay: Asuncion	—	—	6	4	—	—	0	0
Peru	804	372	880	414	418	182	112*	56*
United States	2	—	1	—	41	34	2	—
Uruguay	0	0	3	1	0	0	0	0
Venezuela	—	—	4	2	—	—	—	—
Asia.								
Ceylon	136	131	230	213	153	131	65	60
China:								
Amoy	—	254	—	33	—	18	—	—
Canton	28	23	—	—	—	—	—	—
Foochow	32	19	—	—	—	25	—	—
Northern Manchuria	—	—	—	—	—	—	5	—
Nanking	—	—	—	—	—	31	—	—
Shanghai	0	0	0	0	2	1	1	0
Dodecanese	—	—	—	—	12	2	—	—
Dutch East Indies:								
Java	—	10,967	—	8,675	—	13,078	—	14,408
Makassar	—	—	—	—	39	—	10	8
Hong-Kong	1,181	1,071	148	136	0	0	0	0
India (British)	—	102,126	—	292,987	—	398,757	116,940	95,136
Indo-China (French)	1,268	1,093	1,040	844	766	453	536	—
Iraq	589	—	787	434	523	309	22	2
Japan	118	89	1	1	7	6	0	0
Palestine	64	19	15	5	2	1	0	0
Persia:								
Abadan	—	—	481	409	119	85	—	—
Mohammerah	21	—	71	45	149	108	—	—
Siam	196	164	397	329	93	67	378	291
Straits Settlements	39	39	59	55	21	19	54	46
Syria	54	2	21	—	25	—	13	—
U.S.S.R. (Asiatic territories):								
Kirghiz Republic	—	14	429	—	52	—	60	—
Siberia	—	—	3	—	6	—	1	—
Turkestan	—	—	0	0	124	—	0	0
Europe.								
France	3	—	14	—	4	—	4	1
Greece	50	—	41	6	69	16	28	1
Italy	21	—	1	—	3	1	2	—
Portugal:								
Lisbon	21	18	15	2	3	1	0	0
Azores: St. Michael	544	153	200	84	25	10	4	1
Spain	12	—	52	—	0	0	0	0
Turkey (European)	29	10	12	3	7	2	11	6
U.S.S.R. (European territories)	24	17	57	—	22	—	192	—

(*a*) For the City of Guayaquil only.
* For Callao and Lima only.

Northern Africa.

Egypt. — Fewer plague cases were reported in 1925 than in any year since the re-introduction of infection into Egypt in 1899, with the exception of the first two years, 1899 and 1900. Thirty-three cases occurred in the ports; of the remainder, 27 cases were reported from Lower and 78 from Upper Egypt. The case mortality was as usual higher in the ports (73 per cent) than in the rest of the country (50 per cent). Only three cases, all of which occurred at Minia, were described as pneumonic plague.

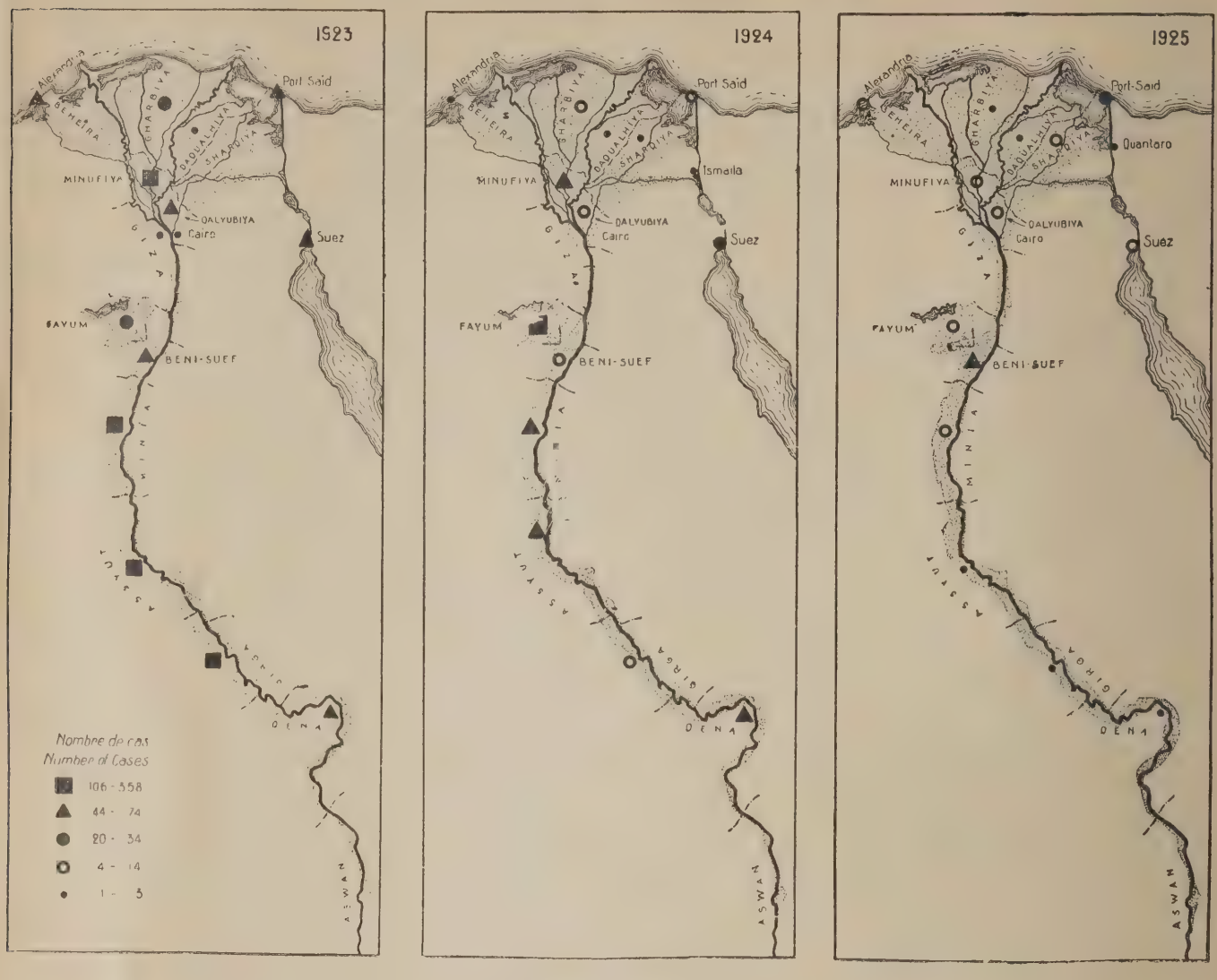
Plague Cases and Deaths reported in Egypt, 1916–1925.

Governorates and Provinces	1916		1917		1918		1919		1920		1921		1922		1923		1924		1925	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Governorates:																				
Cairo . . .	2	0	2	0	1	1	1	1	0	0	0	0	0	0	2	2	0	0	0	0
Alexandria.	61	35	17	9	4	3	9	5	13	4	137	46	71	36	67	33	2	2	4	3
Ismailia .	0	0	1	0	0	0	2	0	0	0	0	0	1	1	0	0	1	1	0	0
Port Said .	32	19	41	25	17	9	40	26	19	11	33	17	54	35	51	28	6	4	20	13
Quantaro .	0	0	0	0	0	0	14	10	0	0	0	0	0	0	0	0	0	0	1	1
Damietta .	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Suez . . .	1	0	318	195	0	0	126	76	87	55	93	58	58	33	47	24	20	13	8	7
Frontier Districts .	0	0	0	0	0	0	0	0	49	33	0	0	0	0	0	0	0	0	0	0
Lower Egypt:																				
Beheira . .	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
Daqualhiya	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	1	1	1	1
Gharbiya .	3	2	0	0	0	0	0	0	51	31	30	2	60	16	24	10	6	2	2	2
Minufiya .	21	14	0	0	0	0	17	4	1	1	0	0	1	1	292	97	58	36	8	4
Qalyubiya .	4	0	6	0	0	0	0	0	0	0	0	0	1	1	74	10	14	4	5	2
Sharqiya. .	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	11	3
Upper Egypt:																				
Assyut . .	296	144	36	23	9	4	304	152	177	106	20	12	47	28	358	203	44	35	2	2
Aswan. . .	2	1	0	0	0	0	0	0	2	1	0	0	1	1	0	0	0	0	0	0
Beni-Suef .	182	89	2	0	7	6	24	6	4	2	1	1	62	21	64	22	4	4	50	21
Fayum . .	726	340	148	77	34	18	63	27	4	3	1	1	33	11	34	11	106	33	8	6
Girga . . .	50	40	55	14	28	27	140	111	13	5	10	7	9	3	342	197	10	3	3	3
Giza . . .	32	13	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0
Minia . .	285	127	51	20	254	83	137	55	35	15	29	8	87	39	107	48	58	28	14	8
Qena . . .	5	4	54	36	2	2	0	0	6	2	1	1	1	1	52	35	45	26	1	1
Total .	1702	828	731	399	356	153	877	473	462	269	356	153	487	228	1519	725	377	194	138	77

Algeria and *Tunisia.* — During 1925, only 13 plague cases were notified in Algeria and 6 in Tunisia; none were reported in the other countries on the African littoral of the Mediterranean.

Islands in the Atlantic. — There was less plague in 1925 than during the two previous years in the Atlantic islands: 10 cases were reported in the Canaries, 4 in the Azores and none in the Cape Verde Islands during 1925.

PLAGUE CASES REPORTED IN THE VARIOUS PROVINCES OF EGYPT IN 1923, 1924 AND 1925.



West Coast of Africa.

Senegal. — Plague was much less in evidence in Senegal in 1925 than in the preceding years, only 402 cases being reported as against 1,834 in 1924 and 7,999 cases in 1920. The majority of the cases (307) occurred in the districts of Thiès and Tivaouane; only 13 cases were reported from the district of Cayor, where there were 1,338 cases during 1924. The maximum incidence occurred in July and no cases were reported during the last two months of the year. There was no plague at Dakar during either 1924 or 1925.

Gold Coast. — The epidemic which occurred in this colony in 1924 did not recur in the year under report. In 1925 there were only 2 cases in March and 1 in April.

Nigeria. — Plague was introduced into Lagos in July 1924 and a serious epidemic followed which culminated in October of that year. During the following year, cases continued to occur at Lagos, but there was no epidemic outbreak. A serious outbreak occurred, however, at Ijebu-Ode, about forty miles north-east of Lagos, which reached its height in September. The disease does not appear to have spread further inland.

East Coast of Africa and Islands in the Indian Ocean.

Kenya and Uganda. — Plague was somewhat more prevalent in this area in 1925 than during the preceding year, but the situation has nevertheless remained far more favourable than it was a few years ago. The infected districts in Kenya and Uganda, as well as in the Tanganyika Territory, are largely situated in the neighbourhood of Lake Victoria.

The case mortality appears to be extremely high and the proportion of septicæmic and pneumonic cases is considerable. An intensive rat destruction campaign has been carried on for some years; in Uganda nearly thirteen million rats were destroyed during 1924, and in the Kavirondo districts of Kenya more than ten million rats were destroyed during the four years 1921–24. Anti-plague vaccination was carried out during 1924, in 31,836 cases in Uganda and in 65,750 cases in Kenya; its value is thought to have been doubtful.

Mauritius. — The number of plague cases diminished from 161 in 1924 to 74 in 1925. This is the lowest number reported in any year since 1920, when no human case was reported.

Madagascar. — Plague cases reported in Madagascar were more numerous in 1925 than during any previous year. The disease has spread continuously since its introduction into Tananarive in 1921, and the 400 cases reported during December 1925 is the highest monthly return on record. The case mortality remained very high and pneumonic and septicæmic cases were frequent. The seasonal maximum incidence occurred between November and February. The great majority of cases were reported, as in previous years, from the Province and City of Tananarive, only 233 of the total of 1,742 cases reported during 1925 occurring in other localities. There were 37 cases at Tamatave.

South Africa.

Union of South Africa. — Human plague was much less prevalent in 1925 than during the preceding year. Only 70 cases were reported, of which 59 during the first quarter of the year, as against 400 cases reported in the year 1924. The cases were confined to the Orange Free State and a few neighbouring districts of the Cape Colony. Twenty cases, with a case mortality of 50 per cent, occurred among the white population, and 50 cases, with a case mortality of 60 per cent, among the indigenous population.

America.

Plague cases occurred, as during previous years, in a number of localities in South America, but their number remained, with very few exceptions, inconsiderable. A few cases were reported from *Brazil* in Bahia, Pernambuco, Ceara and Santos; in *Argentine* a few cases occurred at Santa Fé, Bahia Blanca, Rosario and Cordoba. *Chile* was free from plague during 1925.

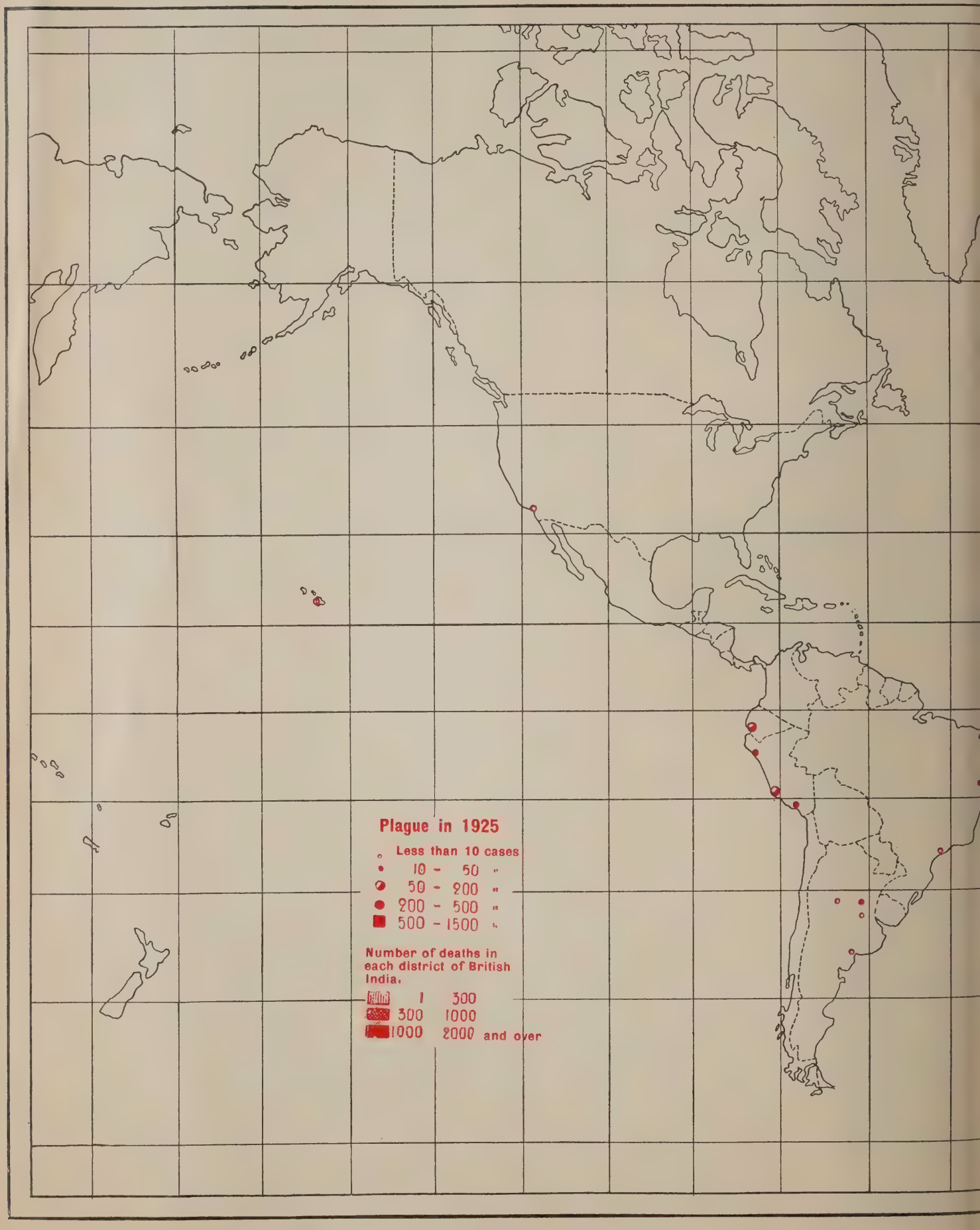
Peru. — Many localities in Peru remained infected during 1925, but detailed returns for the year are available only for the cities of Lima and Callao, where 56 deaths from plague were reported as against 70 in 1924 and 72 in 1923. The infected localities are situated along almost the entire littoral of Peru, while the mountainous areas and the districts beyond the Andes have remained free. The infection was introduced into Callao in 1903 with a cargo of flour, since when there has been about 17,000 cases. The case mortality appears to be relatively low — about fifty per cent.

Plague Cases reported in Peru, 1903–1924.

Year	*Cases*	*Year*	*Cases*	*Year*	*Cases*
1903	172	1911	872	1919	654
1904	940	1912	892	1920	758
1905	775	1913	873	1921	870
1906	641	1914	759	1922	804
1907	1,169	1915	455	1923	880
1908	1,700	1916	508	1924	418
1909	999	1917	414		
1910	706	1918	825		

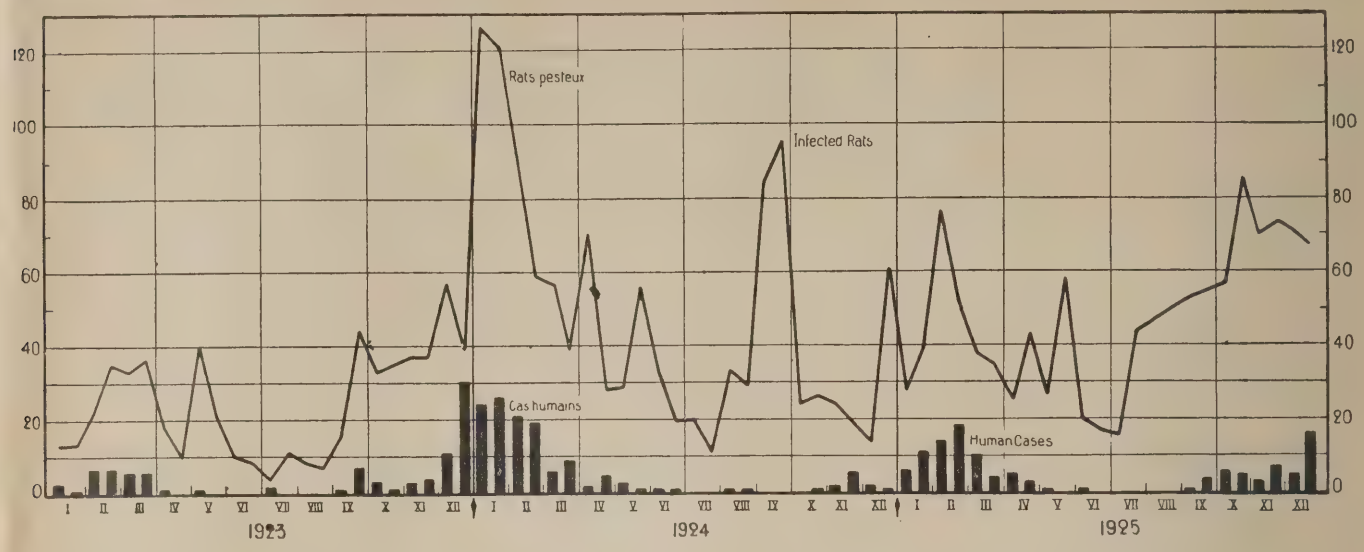
Ecuador. — Plague was introduced into Guayaquil in 1908, presumably from Callao. From 1908 to 1916 the number of cases varied between 400 and 900 annually. Since then there has been a decline interrupted by outbreaks, which, however, in no case have reached the magnitude of those of former years. During 1925 there were 120 cases in Guayaquil as against 132 in 1924, and 4 cases in neighbouring villages as against 16 in the previous year. The maximum plague prevalence occurs usually between December and February — that is, at the beginning of the rainy season. The case mortality is unusually low: it averaged 33 per cent during the years 1920–24 and was 44 per cent in 1925. During 1925, 1,150 rats were found infected, which is about the same number as were found during the previous year and twice as many as in 1923. Since 1921 an active rat destruction campaign has been carried out in Guayaquil; one and a-half million rats have been destroyed during the five years 1921–25, a remarkable figure in view of the fact that Guayaquil has only about 100,000 inhabitants. Human and rat plague centres around the southern market-place, which is on the river front. The infection is now confined to *Rattus norvegicus*, a fact which may explain the small number of human cases in proportion to the large number of rats found infected. Quayside water being only 18 feet deep, larger vessels transfer their cargoes to lighters and load from lighters at Puna further down the river, a fact which diminishes the risk of exporting the disease.

DISTRIBUTION OF CASES OF


Plague in 1925
Less than 10 cases
10 - 50 "
50 - 200 "
200 - 500 "
500 - 1500 "
Number of deaths in each district of British India.
1 300
300 1000
1000 2000 and over

OUT THE WORLD IN 1925.

Human Plague Cases and Infected Rats found at Guayaquil by Semi-Monthly Periods, 1923 to 1925.



North America. — Human plague was absent from this continent during 1925, except for two cases which occurred during the first two weeks of January at Los Angeles, California. No infected rats have been found at New Orleans since January 17th, or at Oakland, California, since March 4th, 1925, but infection among the rats of Los Angeles persisted up to November.

Asia.

Near East.

Plague was less prevalent in the western part of Asia during 1925 than for some years past. Twelve cases were reported at *Beyrouth* as against 24 in the previous year. It appears that plague has also been rare, if not absent, in *Persia.*

In *Iraq*, where from five to seven hundred cases were reported in each of the preceding years, only 22 cases were notified in 1925. Baghdad and Basrah appear to have been the principal foci of plague, but during epidemics the disease spreads to the neighbouring country. The bubonic type prevails, but two pneumonic outbreaks have been reported — one in January 1923 and the other in January 1924 — among tribes in the Baghdad province; there were 50 cases in the first of these outbreaks and 40 in the second. Both were accompanied by a few bubonic cases. The case mortality has usually been from 60 to 70 per cent for the bubonic cases, which is about the same rate as in India, and 100 per cent for the pneumonic cases. The excessive heat of the summer months, July to September, and the cold of December and January appear to inhibit the spread of the disease, but the persistence of a rat-epizootic throughout the winter has been demonstrated in Baghdad. *Rattus rattus* is about twice as common in Baghdad and Basrah as *Rattus norvegicus,* and *Xenopsia cheopis* is the most prevalent rat flea. The most severe epidemic in recent times was in 1915, when there were 1,700 cases with 1,300 deaths at Baghdad.

Plague Cases reported in Iraq, 1919–1925.

Year	*Baghdad*	*Basrah*	*Elsewhere.*
1919	871	—	—
1920	132	69	—
1921	57	33	—
1922	341	260	88
1923	451	289	47
1924	271	111	140
1925	18	1	3

The plague situation improved also in the Russian territories of *Central Asia*; no case was reported in Turkestan, where there were 124 cases during 1924. There were 60 cases in the Kirghiz Republic as against 52 in 1924 and 429 in 1923. The cases occurred, as did those in the Lower Volga area and the Kalmuk steppes, in thinly inhabited districts where the chance of rapid spread is small.

British India.

As explained in previous reports, it is more convenient, when discussing the incidence of plague in British India, to make use of the plague-year July to June rather than the calendar year. The close of the calendar year coincides in nearly all provinces of British India with an important stage in the development of plague epidemics, whereas the end of June is generally a period of relative, if not complete, plague quiescence. In the general remarks that follow attention will be chiefly given to the plague year 1924–1925.

In the following table, the total plague mortality for that year in the different Indian provinces which were infected, together with certain Indian States, is set out and compared with the corresponding totals for the previous five years and the annual average plague mortality for the 26-years period 1898 to 1924:

DEATHS FROM PLAGUE IN INDIA, 1919-1925.

Provinces	1919-1920	1920-1921	1921-1922	1922-1923	1923-1924	1924-1925	Annual Average 1898-1924
North-West Frontier Province	0	0	0	937	13,828	1,021	—
Punjab	6,552	1,959	7,876	41,703	246,264	48,902	127,221
Delhi	0	0	0	2,574	2,563	174	—
United Provinces	23,483	25,374	12,039	76,311	54,427	51,255	99,827
Bihar and Orissa	18,682	17,202	8,559	29,519	11,478	6,923	40,680
Central Provinces and Berar	17,972	4,149	7,561	23,603	13,950	6,807	17,273
Bombay	12,344	9,926	4,606	14,821	28,094	6,674	91,707
Hyderabad	20,861	9,404	733	9,792	13,736	12,207*	12,149
Mysore	5,269	9,675	6,771	5,797	5,091	1,551*	10,070
Madras	6,875	18,217	7,179	11,441	7,739	2,960	8,095
Bengal	77	58	136	80	2	—	2,682
Burma	5,464	3,964	6,517	8,154	5,566	2,743*	4,822
Other Indian States	4,014	1,223	243	3,143	6,239	615*	16,662
Total	121,593	101,151	62,220	227,875	408,977	141,832	431,820

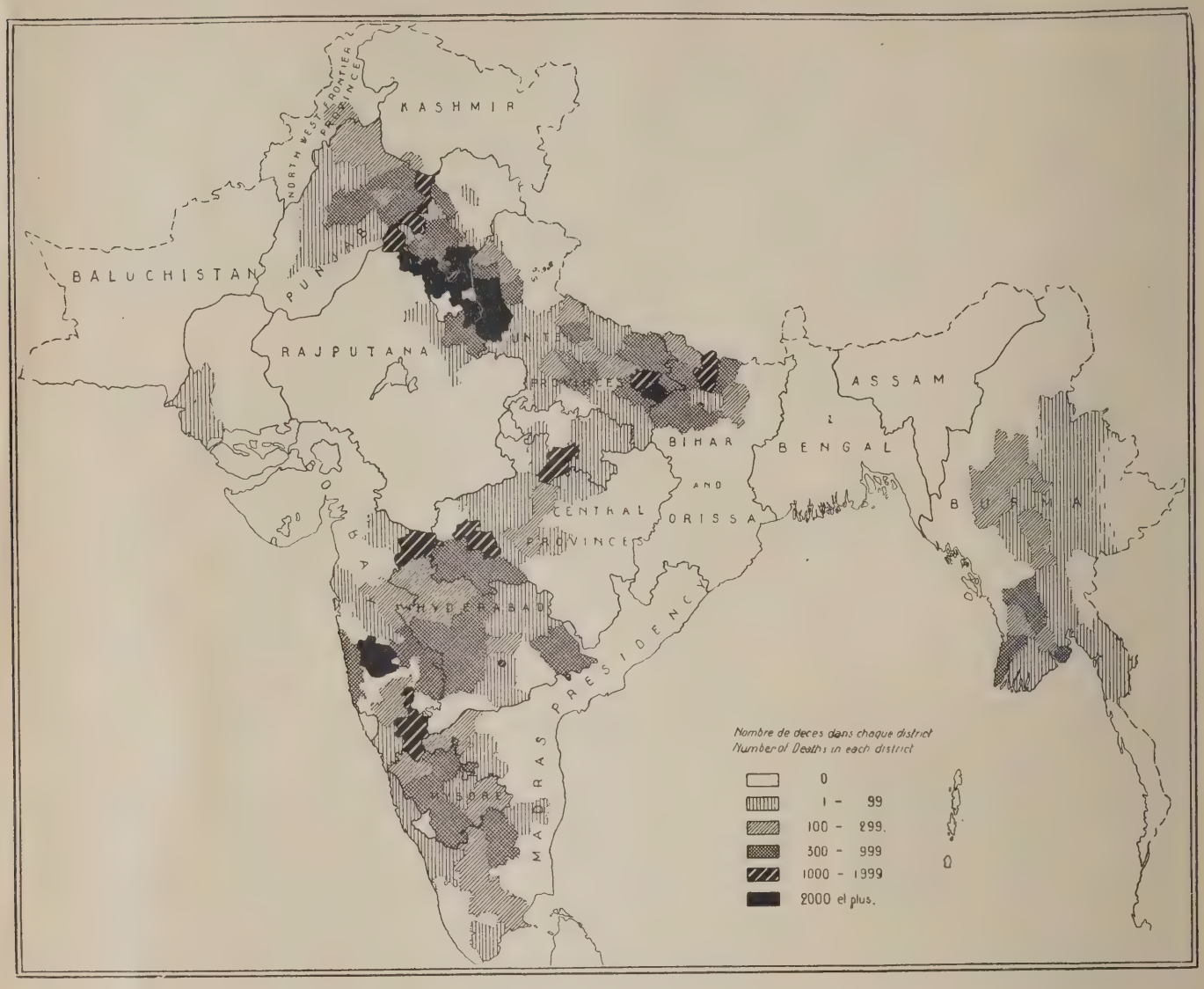
* Provisional data.

The total plague mortality for India for the year under report was about 141,000, which is a little more than a third of the mortality for the preceding year, though it is considerably higher than that of the year 1921–1922, when the total plague deaths amounted to only 62,000. It is of interest to recall that 1921–1922 was the only year in which plague mortality in India fell below 100,000 since plague obtained a foothold in that country in the closing years of the last century. Since 1898, in only five years has the plague mortality in India as a whole been lower than it was in 1924–1925, the year under report.

The United Provinces and the Punjab were responsible for about three-quarters of the total Indian plague mortality of 1924–25, but in neither case did the number of plague deaths total more than half the average incidence during the previous 26 years. Elsewhere in India the prevalence of plague was relatively slight.

The map which is reproduced shows the geographical distribution of plague deaths in India during 1925, on a district basis. The various hatchings refer to the total number of plague deaths and are not expressed as rates. Moreover, it must be remembered that the populations of districts vary very considerably in the different provinces. The map, therefore, does not give an accurate idea of the intensity of the epidemic in various parts of India, but it is sufficient to give a general indication of those parts of the country which suffered most severely and those large areas of the country which were completely free from plague. The disease was chiefly in evidence in those parts of the country which have earned an unenviable reputation for the severity of plague epidemics in the past. The eastern districts of the Punjab and the contiguous districts in the west of the United Provinces suffered most. Three districts in the Bombay Presidency (Satara, Dharwar and East Kandesh) were together responsible for 6,200 of the 8,350 plague deaths reported during 1925 in the Bombay Presidency as a whole. Satara has suffered more severely and more consistently from plague than any other district in the Presidency. A very considerable number of deaths was likewise reported from the east of the United Provinces and the adjoining district of Bihar, though here the disease has not been nearly so severe as in many past years.

DEATHS FROM PLAGUE REPORTED IN THE VARIOUS DISTRICTS OF BRITISH INDIA IN 1925.



The continued freedom from plague of practically all districts bordering the Bay of Bengal, with the exception of a limited area of Lower Burmah, is shown on the map. The freedom from plague of this large area is an epidemiological phenomenon of much interest and importance. Assam, as usual, also remained plague free during 1925, and not a single case was reported from Bengal with the exception of a couple of sporadic cases at Calcutta. Bengal has never suffered severely from the disease, but not since the year 1897 has it been completely plague free.

Remainder of Indo-Siamese Area.

Ceylon. — Only 65 plague cases were reported during 1925, which is less than in any year since the introduction of plague into the island in 1914. The majority of the cases (52) occurred as usual at Colombo and the case mortality was exceptionally high, as it had been also during the previous years.

Java. — Plague has been very prevalent in Java during 1925. The deaths ascribed to plague numbered 14,408 as against 13,078 during the previous year. This is the highest number of deaths reported since the first appearance of plague in Java (1911) with the exception of 1914, when there were 15,756 deaths from plague. The cause of this high prevalence was an epidemic which occurred in Central Java, especially in the provinces of Surakarta, Kedu and Banjumas, during the last months of 1924 and the beginning of 1925. The annual minimum incidence of plague occurs in Java, as in India, in June or July, and an epidemic is likely to affect the death returns of two calendar years. During the year ending June 1925, there were 16,720 deaths from plague as against 8,360 in 1923–24. The three western provinces were, as usual, free from plague and only a few localised outbreaks occurred in the seven eastern provinces, which were severely infected between 1911 and 1915. The highest incidence (234 deaths per 100,000 inhabitants) was recorded in the province of Surakarta. There were 10 cases of plague at Makasser in the Island of Celebes.

Incidence of Deaths from Plague in the Provinces of Java in 1925.

Siam. — There were 378 plague cases in Siam in 1925 as against 93 during the previous year and 397 in 1923. The maximum occurred in March. Local outbreaks have constantly occurred in Siam since its introduction in 1904 but never general epidemics.

French Indo-China. — 605 plague cases were reported in 1925 as against 766 during the previous year. This is the lowest number of plague cases reported during the last fourteen years or more. Epidemics comparable to those in India have never occurred. The highest number of cases (276) was reported from Kwangchow Wan, the population of which numbers only about 200,000. Tonking was free from plague. The number of cases reported elsewhere were: 214 in Cambodia (111 in 1924), 85 in Annam (66 in 1924) and 30 in Cochin-China (35 in 1924).

Straits Settlements. — There were 53 deaths from plague at Singapore in 1925 as against 17 during the previous year. This is a higher number of cases than normally occurs and it has been exceeded only twice since the introduction of plague in 1900. The case mortality was as usual high, the deaths numbering 44.

Far East.

Hong-Kong, which was infected without interruption from 1894 to 1923, was free from plague in 1924 and 1925. There was only one plague case at *Shanghai* in 1925. Rat plague existed at Shanghai from 1908 to 1916, but human cases occurred only from 1910 to 1915 with the exception of two cases in 1924. Plague does not appear to have occurred in other Chinese ports, but information from these is mostly fragmentary. Plague has been little in evidence in *Manchuria* in 1925; one case was reported at Manchouli and 3 cases in stations near that place on the Chita-Harbin railway.

No plague case occurred in *Japan* in 1925. *Korea* remained as usual free from plague.

Europe.

Plague has been less in evidence on the European shores of the Mediterranean in 1925 than during the preceding years. Four cases were reported at *Marseilles* in August and two cases near *Naples* in September. There were 11 cases at *Constantinople* as against 7 in 1924. Twenty-eight plague cases were reported in *Greece* as against 69 in 1924, of which 14 were at Athens and Piræus, 9 at Halkis on the Island of Euboea, and the remainder sporadically at Patras, Chios, Syros, Mytilene, Heraclion, Salonica and Cavalla.

Plague has been more prevalent in *European Russia* in 1925 than for several years, 192 cases having been reported as against 22 in 1924. The first cases were reported in the Kalmuk autonomous area on May 19th; early in June the disease had extended to the district of Salsk in the Don area near the Kalmuk frontier. It appeared in the government of Stalingrad (Tsaritsyn) about the middle of June and in the government of Astrakhan in the middle of July. The case mortality was about 70 per cent and only bubonic cases were found. A severe and widespread epizootic of the rodents in this area was proved, about 4 per cent of the marmots (Tarabagan) examined being found infected. The rodents migrated in large numbers in search of food owing to a severe drought and so spread the disease over a large area. The fact that human settlements are scattered over these steppes explains the relatively low number of human cases.

CHOLERA

The distribution of cholera in Asia was very different in 1925 from that during the previous year. While, during 1924, there was a serious epidemic prevalence in nearly the whole of India, cholera was but little in evidence elsewhere. In 1925, on the contrary, cholera was relatively infrequent in most of its principal centres in India, but spread rapidly in many Asiatic countries east of India. Several of the principal ports of China, Japan and Siam became in turn infected. India remained, nevertheless, as usual the principal centre of cholera in the world, a fact which clearly appears from the statistics shown below:

CHOLERA CASES AND DEATHS REPORTED DURING THE YEARS 1922-1925.

Asia.

	1922		1923		1924		1925	
Country	*Cases*	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*
Ceylon	0	0	—	8	17	14	231	165
China:								
Shanghai	331	84	—	67	1	1	22*a*	93*b*
Canton	258	58	1	—	—	—	—	—
Amoy	—	—	—	—	—	1	1	0
Foochow	—	—	—	—	—	—	29	9
Formosa	—	—	—	—	0	0	3	—
Hong-Kong	1	0	1	1	0	0	2	2
British India	—	125,808	—	74,326	—	306,811	—	96,752
North-West Frontier	—	92	—	2	—	9	—	103
Kashmir	—	—	—	—	—	184	—	11,504
Punjab	—	128	—	11	—	3,351	—	3,010
Delhi	—	6	—	12	—	121	—	48
United Provinces	—	2,330	—	2,591	—	67,000	—	5,811
Bihar and Orissa	—	26,805	—	8,198	—	77,480	—	16,729
Bengal	—	51,712	—	41,483	—	48,514	—	14,005
Assam	—	16,219	—	3,728	—	19,182	—	5,858
Central Provinces	—	864	—	1,090	—	9,704	—	124
Madras Presidency	—	16,502	—	5,169	—	51,971	—	38,123
Hyderabad State	—	3,283	—	1,174	—	3,354	—	17
Bombay Presidency	—	2,768	—	9,221	—	8,236	—	49
Burma	—	5,047	—	1,488	—	8,083	—	1,262
Other Indian States	—	52	—	159	—	9,622	—	109
French India:								
Pondicherry	—	—	—	181	—	168	1,076	867
Arioncoupon	—	—	—	5	—	5	0	0
Karikal	—	—	—	—	7	6	33	21
Chandernagore	—	—	—	—	22	15	1	1
Mahé	—	—	—	—	2	0	1	0
Indo-China	1,737	970	310	154	180	73	232	96
Annam	255	124	43	17	16	2	48	6
Cochin-China	984	632	199	112	55	28	66	39
Cambodia	382	221	40	10	49	28	91	43
Tonking and Kwangchow Wan	27	2	39	4	60	15	26	8
Laos	89	15	4	—	0	0	1	0
Iraq	0	0	1,600	1,110	0	0	0	0
Japan	743	427	4	2	0	0	624	381
Java	28	—	0	0	0	0	0	0
Korea	40	24	—	—	0	0	6	5
Kwantung	—	—	—	—	4	—	0	0

(*a*) Foreigners.
(*b*) Chinese.

Asia *(continued).*

Country	1922 Cases	1922 Deaths	1923 Cases	1923 Deaths	1924 Cases	1924 Deaths	1925 Cases	1925 Deaths
Malay States:								
Federated	0	0	0	0	4	4	1	1
Unfederated: Kelantan	—	—	29	24	1	1	8	4
Persia:								
Mohammerah	7	2	55	27	0	0	0	0
Assara	21	0	—	—	0	0	0	0
Abadan	—	—	—	992	1	1	0	0
Ahwaj	—	—	—	2	0	0	0	0
Ahouaz	—	—	11	8	0	0	0	0
Bouchir	—	—	—	—	1	1	0	0
Philippine Islands	165	88	28	15	31	22	995	557
Manila	—	23	1	0	9	2	296	76
Provinces	—	65	27	14	22	18	690	401
Siam	141	80	213	108	97	61	3,202	2,046
Straits Settlements	3	2	0	0	12	7	2	2
U. S. S. R. (Asiatic territories):								
Transcaucasia	675	—	3	0	0	0	0	0
Kirghiz Republic	8,935	—	5	—	0	0	1	0
Turkestan	2,522	—	4	—	0	0	0	0
Siberia	9,308	—	2	—	1	0	0	0
Europe.								
Poland	121	34	0	0	0	0	0	0
U. S. S. R. (European territories)	20,312	—	91	—	9	—	11	—
Ukraine	41,903	—	14	—	0	0	0	0

India.

Although final data are available only for a part of 1925, it is certain that the cholera incidence for India as a whole has not been higher than in 1920 and 1922, which were among the most favourable years experienced in India. The number of deaths from cholera has been lower during the last five years than during any of the previous six quinquennial periods; but in a country like India, where cholera has been widespread and endemic certainly for many centuries, it would seem premature to draw conclusions as to whether this decline is indicative or not of a final reduction of the disease. The decrease of cholera has certainly been less marked than the decrease of plague, and while plague in the past has been absent from India for long periods, the same has probably never been the case with cholera.

Deaths from Cholera reported in British India, 1896–1925.

Year	Deaths	Year	Deaths	Year	Deaths
1896	491,867	1906	713,664	1916	300,071
1897	570,782	1907	413,180	1917	277,537
1898	153,117	1908	607,278	1918	571,643
1899	171,908	1909	242,848	1919	602,304
1900	850,985	1910	435,077	1920	131,203
1901	282,649	1911	356,157	1921	459,843
1902	125,885	1912	425,192	1922	125,808
1903	314,299	1913	311,127	1923	74,326
1904	193,457	1914	299,174	1924	306,811
1905	442,508	1915	409,328	1925	96,752*

* The data for the fourth quarter are provisional.

The outstanding features of the cholera situation in India in 1925 were a relative quiescence of the disease in its principal centres, *i.e.*, in Bengal and the Ganges Plain, its almost complete absence from Bombay Presidency, Hyderabad and the Central Provinces, but an occurrence, on the other hand, of severe epidemics in the

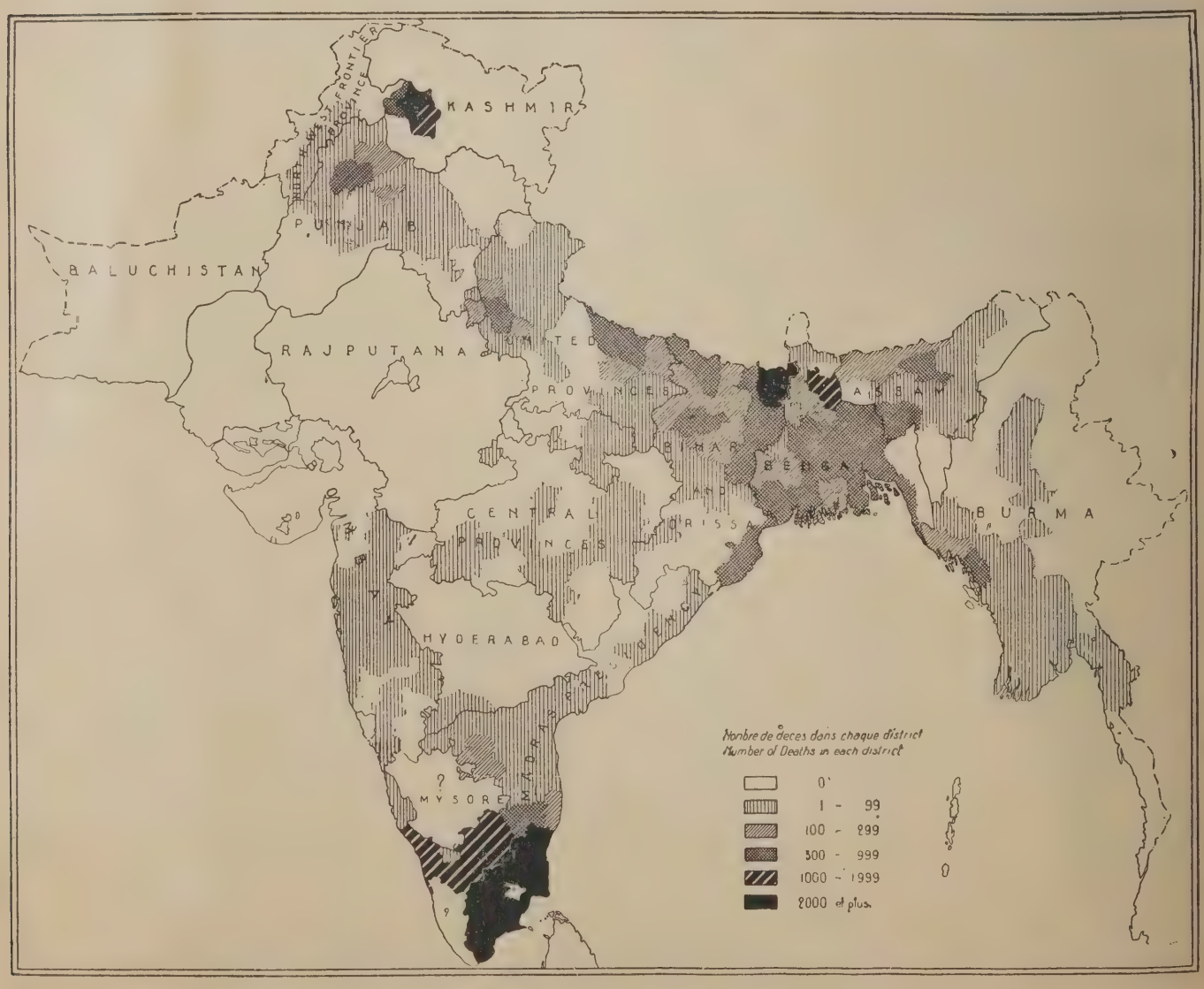
endemic centres which are most distant from Bengal — namely, Kashmir and the southern part of Madras Presidency. The number of deaths reported in each district is shown on the map. In view of the size of India and of the vast multitude of its population, it is necessary to consider separately the principal provinces for which statistics are shown in the table below for the last fourteen years — that is, since the present provincial boundaries of Bengal, Bihar and Orissa and Assam were established.

Deaths from Cholera in the Provinces of India from 1912 to 1925.

Provinces	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
North-West Frontier .	1,320	175	2,300	932	194	0	31	4,400	2	4,285	92	2	9	103
Kashmir	—	—	—	—	—	—	—	—	—	—	—	—	184	11,504
Punjab	1,833	5,811	6,656	13,196	1,651	1,365	257	8,561	138	19,215	128	11	3,351	3,010
Delhi	406	37	12	92	69	12	3	66	7	635	6	12	121	48
United Provinces. . .	18,894	60,427	32,498	90,508	33,300	21,440	119,746	81,365	6,952	149,667	2,330	2,591	67,000	5,811
Bihar and Orissa . . .	77,023	70,379	32,115	88,349	90,582	109,620	205,584	104,727	26,341	90,688	26,805	8,198	77,480	16,729
Bengal	95,467	78,898	89,224	130,679	70,836	45,021	82,379	124,949	54,199	80,547	51,712	41,483	48,514	14,005*
Assam	14,303	16,407	9,270	26,979	13,099	10,953	14,077	33,080	2,421	12,829	16,219	3,728	19,182	5,858
Central Provinces . .	34,313	15,286	20,345	5,662	39,205	691	3,351	62,089	3,491	58,331	864	1,090	9,704	124
Madras Presidency . .	92,497	37,750	68,449	30,098	16,735	58,939	122,263	93,262	31,139	27,064	16,502	5,169	51,971	38,123
Mysore	6,748	8,062	849	8	0	7,288	3,153	2,306	220	25	46	79	7,699	—
Hyderabad State. . .	1,190	1,322	5,893	2,072	1,475	2,579	7,200	13,321	57	1,381	3,283	1,174	3,354	17*
Bombay Presidency. .	64,505	5,134	17,779	377	19,841	17,013	8,834	51,551	2,047	3,521	2,768	9,221	8,236	49
Burma	7,186	4,339	2,073	17,597	1,673	1,914	4,269	13,260	3,396	3,791	5,047	1,488	8,083	1,262*
Other Indian States .	9,507	7,100	11,711	2,779	11,411	702	496	9,367	793	7,864	6	80	1,923	109*
Total	425,192	311,127	299,174	409,328	300,071	277,537	571,643	602,304	131,203	459,843	125,808	74,326	306,811	96,752

* Provisional data.

Deaths from Cholera reported in the Various Districts of British India in 1925.



Provisional data for three quarters and final data for one quarter of 1925 give a total of 14,005 deaths from cholera in Bengal. Judging from the ratio between provisional and final returns for previous years, this number will probably be increased to between 25,000 and 30,000 when final returns become available; but even so, this is the lowest number of cholera deaths ever reported in Bengal since statistics have been kept. In no previous year has the toll of this disease fallen below 40,000 deaths. It is significant that Bengal, which has, as far back as records go, been the most important centre of cholera epidemics, has become less and less affected by the general outbreaks. The fairly severe epidemic which visited the remainder of the Ganges Plain and Madras Presidency in 1924 hardly influenced the number of deaths reported in Bengal, and the epidemic of 1921, which caused a very heavy mortality in the United Provinces, increased only slightly the Bengal death returns. The cases were in 1925 fairly evenly distributed throughout the Presidency. Cholera was practically confined in Assam to a few districts near the Bengal boundary and the number of deaths reported was much below the average for recent years.

The diminution of the cholera incidence in Bihar and Orissa, most of which previous to 1912 was included in the Presidency of Bengal, has been very marked. There were 16,729 deaths in 1925 as against 77,480 in 1924; this is the lowest figure on record with the exception of 1923, when only 8,198 deaths were attributed to cholera. Cholera in Bihar continues to be of decidedly epidemic character, and no evolution towards the attainment of a more or less stable endemic level comparable to that in Bengal seems to have taken place. The same observations refer to the United Provinces, where there were only 5,811 deaths from cholera in 1925 as against 67,000 during the previous year.

Cholera has rarely been very severe in the Punjab. The most extensive outbreak on record occurred in 1892, when about 76,000 deaths were reported, and only five times since then have more than 10,000 deaths been caused by cholera in a single year. In each of the years when outbreaks occurred in the Punjab there were fairly severe epidemics in the United Provinces, but widespread prevalence in the latter does not necessarily imply severe cholera prevalence in the Punjab. Cholera is usually rare in the Punjab in inter-epidemic years; in 1923 there were only 11 deaths ascribed to cholera, which is the lowest return on record. It is noteworthy that cholera cases in years of low incidence are reported sporadically from many districts indicating that the disease is endemic in this area. It is probable, nevertheless, that the occurrence of epidemics depends upon the importation of new infection: cholera, though generally imported from the United Provinces, has, in a few instances, also come from Kashmir. This was certainly the case in 1925.

The epidemiology of cholera in the North-West Frontier Province resembles that of the Punjab, only it is even rarer than there in inter-epidemic years and it frequently disappears altogether. There has been no serious outbreak since 1921.

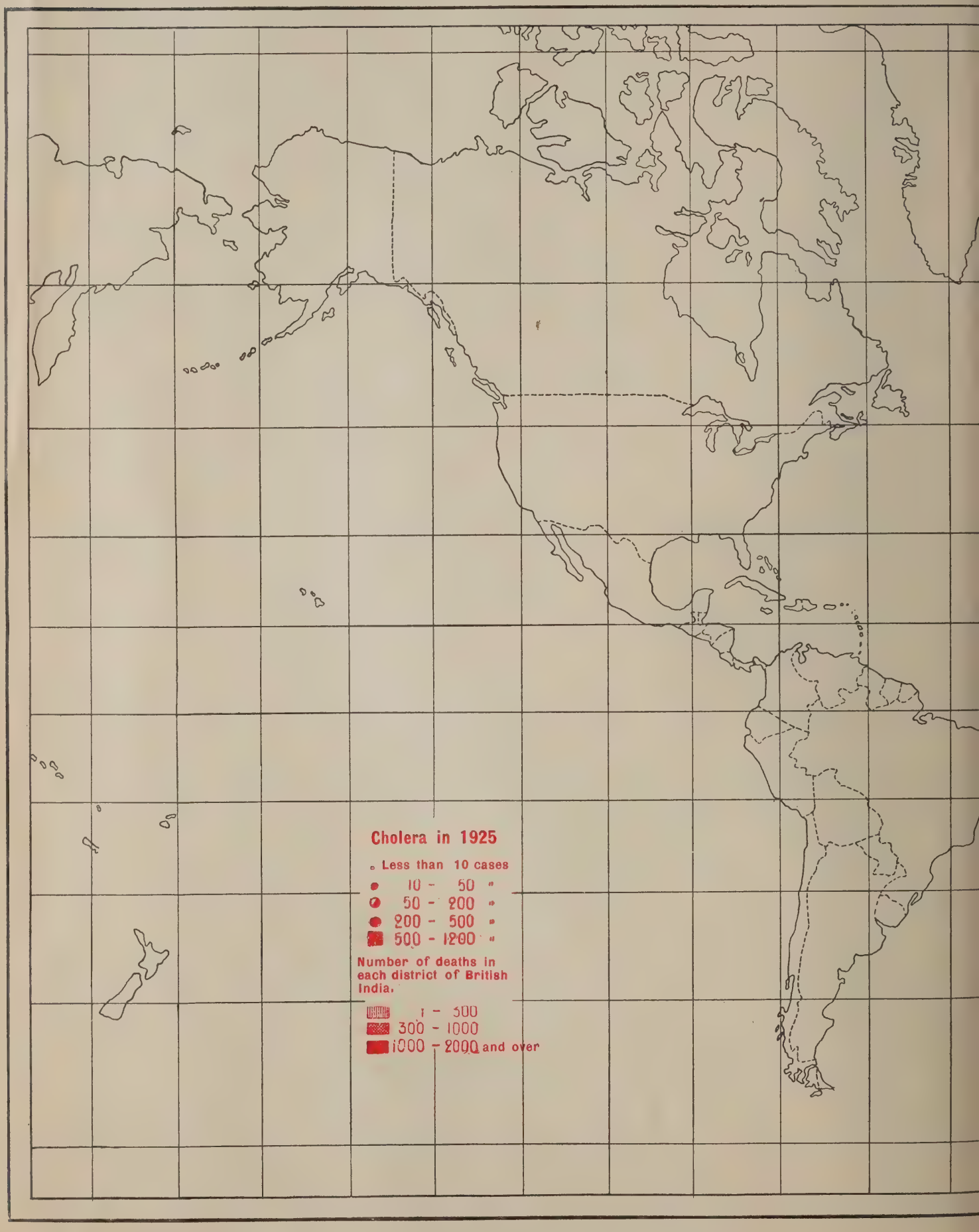
Cholera seems to be endemic in Kashmir, but epidemics are relatively infrequent and the disease is exceedingly rare in inter-epidemic years. The most severe epidemics in previous years for which statistical information is available occurred in 1919, when 11,516 deaths were reported. Cholera cases were discovered during the coldest months of the winter 1924–25 and did not disappear until the middle of February. An explosive outbreak occurred at the beginning of April 1925, reaching a maximum during the first week of May. A total of 11,504 deaths were reported, the last cases occurring in October. The reported case mortality was 54 per cent. The vast majority of the cases occurred in the province of North Kashmir, where there were nearly 20 deaths per 1,000 inhabitants. South Kashmir and Jammu were only slightly affected.

Only 124 deaths from cholera were reported in the Central Provinces in 1925; this is the lowest incidence recorded during the last 35 years, with the exception of 1898, 1901 and 1902. Severe epidemics have occurred, during the last ten years, only in 1919 and 1921, which were years of high cholera prevalence throughout the East. It seems, therefore, that cholera really has become less prevalent in this area.

The same remark applies to Bombay Presidency, which includes nearly the whole western coast of India. No very severe epidemic has occurred there since 1919, and only 49 deaths were attributed to cholera in 1925, which is the lowest incidence on record. It will be recalled that Bombay Presidency suffered very severely from cholera in 1900, when about 164,000 deaths were reported, a number which was second only to that reported in Bengal. It is noteworthy that the few cases which did occur in 1925 in Bombay Presidency were distributed over sixteen districts, in most of which only one death was reported and in none of which there were more than ten deaths, indicating that the disease is still endemic in this area.

The most intense outbreak in India in 1925, with the exception of the very localised epidemic in Kashmir, was the one which occurred in the southernmost part of the Deccan peninsula, which belongs to Madras Presidency. This area is one of the ancient cholera centres in India, and only once during the last thirty-five years—namely, in 1923—has the number of cholera deaths fallen below 10,000 and only three times below 20,000. Severe cholera outbreaks continued during the whole of 1924, reaching a maximum in January 1925; increasing again towards the end of the year and reaching a new maximum in January 1926. The districts most severely affected were Ramnad (opposite the north-west coast of Ceylon), where the death rate from cholera was about 3 per 1,000 inhabitants; Madura, Tanjore and Tinnevelly, where it was between 2 and 2.5

DISTRIBUTION OF CHOLE


Cholera in 1925
Less than 10 cases
10 - 50 "
50 - 200 "
200 - 500 "
500 - 1200 "
Number of deaths in each district of British India.
1 - 300
300 - 1000
1000 - 2000 and over

UT THE WORLD IN 1925.

per 1,000; and Trichinopoly and South Arcot, where it was 1.4 and 1.1 per 1,000 respectively. Coimbatore and Malabar were also seriously infected. Only a few sporadic cases occurred north of Madras.

The French settlement of Pondicherry, which is situated in this area, suffered severely from the epidemic, 867 deaths being ascribed to cholera in a population of about 175,000, which gives a death rate from this disease of nearly 5 per 1,000 inhabitants.

Cholera is endemic in Burma but has never been so severe there as in the Ganges Valley and the other typical cholera centres of India. It has, with the exception of 1915, always been more widespread in Lower than in Upper Burma. The situation was, on the whole, favourable in 1925, and the disease was nearly absent from Upper Burma.

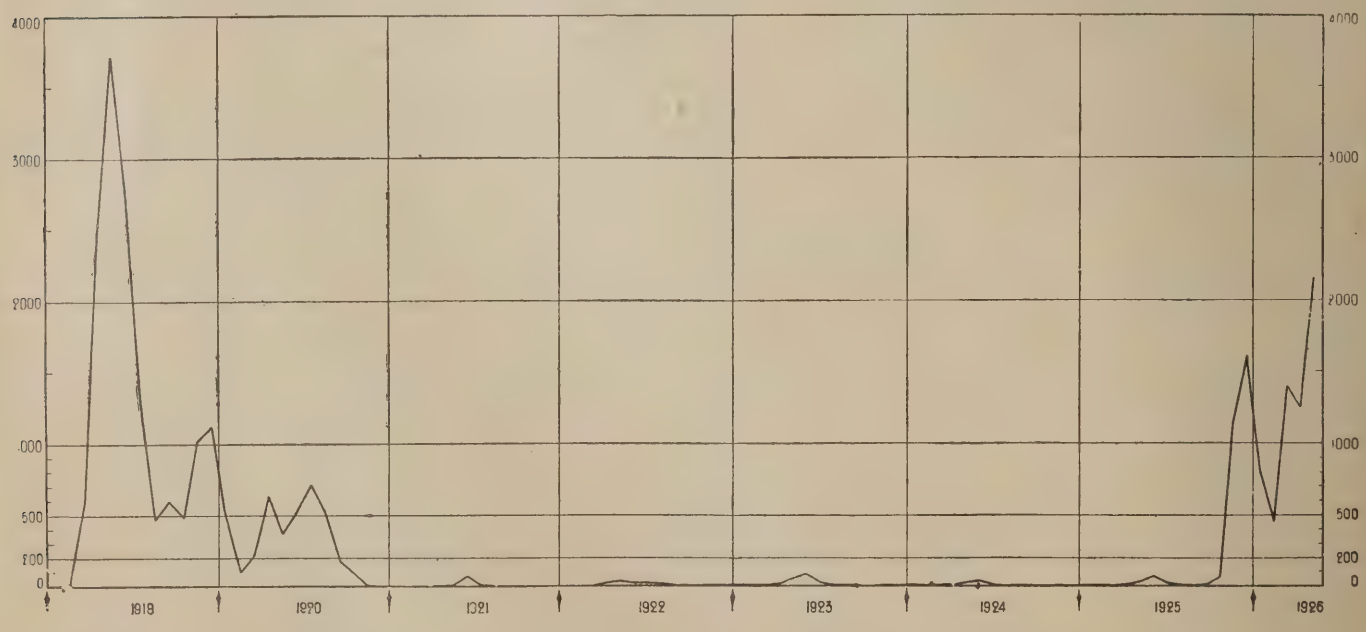
Remainder of Indo-Siamese Area.

Ceylon. — Cholera is probably not endemic in Ceylon, and severe epidemics are not known to have occurred. The island was entirely free from cholera in 1921 and 1922. Cases are not infrequently imported from India and minor outbreaks may result. This is believed to have been the case in 1925, when 231 cases were reported all but 4 outside Colombo.

Siam. — The last great cholera epidemic in Siam occurred in 1919–20 and only sporadic cases were reported during the following four years. Nothing abnormal was indicated by the cholera returns up to the middle of October 1925, 153 cases having been reported up to that date. The maximum occurred as usual at the beginning of June and indigenous cases had altogether disappeared by the end of September.

On October 7th the steamer *Solviken* arrived at Bangkok from Swatow in China with 766 deck passengers on board and cases of cholera occurring among them. Twenty-nine cases and seven deaths were recorded among them up to October 16th. The patients were removed to hospital as they fell ill. A few days later a cholera case occurred in the town, which had been free from cholera since June excepting for one case in August. During the week ending October 17th there were 6 cases in the town, and during the three following weeks 5, 19 and 25 cases respectively. While the case mortality among the passengers of the steamer had

Seasonal Distribution of Cholera Cases reported in Siam from 1919 to 1926.



been 24, it was 82 per cent among the reported cases occurring in the town during these first weeks of the epidemic. During the first week of November the infection spread to the provinces of Ayudhya and Nagara Svarga further up the Menam River; the following week three other provinces were infected and the number of cases increased rapidly in all infected localities. In December seven provinces were infected. The epidemic diminished during the first two months of 1926 but only to increase later with renewed virulence.

The occurrence of this epidemic, directly traceable to a foreign source, shows in the most striking manner the danger which the importation of fresh infection presents to countries where cholera is already endemic but usually not severe.

CHOLERA CASES REPORTED IN SIAM, 1919–1926.

Months	*1919*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*	*1926*	*Four-weekly periods ending:*
January	0	527	0	0	6	8	5	790	January 24
February	12	99	0	0	2	2	8	460	February 21
March	585	211	0	0	4	7	2	1,409	March 21
April	2,541	631	3	26	17	8	7	1,255	April 18
May	3,714	372	7	38	54	14	27	2,168	May 16
June	2,721	518	71	25	82	35	68	2,001	June 13
July	1,304	705	10	21	30	8	26		July 11
August	473	520	4	19	5	3	2		August 8
September	591	174	0	6	4	3	1		September 5
October	483	91	1	2	2	3	7		October 3
November	1,024	5	0	1	0	2	62		October 31
December	1,126	0	0	0	4	4	1,139		November 28
»	—	—	—	3	3	0	1,620		December 26
Total	14,574	3,853	96	141	213	97	2,974		

French Indo-China. — Cholera is endemic in French Indo-China, but devastating epidemics comparable to those which have visited India are not known to have occurred. The last two years show the lowest cholera incidence on record. May and June are, as in Siam, generally the months of maximum incidence. Cholera is usually more prevalent in Cochin-China and Cambodia than in Annam and Tonking; it appears never to have occurred in Laos.

CHOLERA CASES AND DEATHS REPORTED IN FRENCH INDO-CHINA, 1912-1925.

Year	*Cases*	*Deaths*	*Year*	*Cases*	*Deaths*
1912	15,183	12,028	1919	6,418	4,798
1913	353	281	1920	1,591	1,035
1914	798	489	1921	4,482	2,838
1915	9,894	6,326	1922	1,737	970
1916	9,774	6,987	1923	310	154
1917	2,313	1,439	1924	180	73
1918	2,029	1,456	1925	232	96

The epidemic which broke out in Siam during the last months of 1925 reached French Indo-China only in January 1926, after which a severe epidemic followed.

Cholera was as usual infrequent in 1925 in the *Straits Settlements*, only 1 case being reported at Singapore. There were 9 cases in the *Malay States*.

The *Dutch East Indies* have been entirely free from cholera during the last three years. The last epidemic occurred in 1920.

Cholera remains undoubtedly endemic in certain parts of the *Philippine Islands*, although its incidence has greatly diminished since the last important epidemic, which occurred in 1919. The seasonal maximum is usually in August or September.

DEATHS FROM CHOLERA REPORTED IN THE PHILIPPINE ISLANDS, 1914-1925.

Year	*Manila*	*Provinces*	*Year*	*Manila*	*Provinces*	*Year*	*Manila*	*Provinces*
1914	288	2,107	1918	123	4,579	1922	23	65
1915	44	776	1919	352	18,015	1923	0	14
1916	513	7,473	1920	3	1,384	1924	2	18
1917	8	7,883	1921	23	53	1925	76	401

The above table shows that a general outbreak in the Islands generally coincides with an outbreak at Manila and that the disease disappears earlier there than in the provinces. The 1916 epidemic continued thus in 1917 in the provinces, while Manila already was practically free from cholera. This was the case also in 1920, when the severe epidemic of 1919, which was general throughout the East, had a sequel in the provinces but none in Manila. Careful investigation has shown that cholera cases and cholera-carriers are exceedingly rare at Manila in inter-epidemic years. There seems, therefore, to be reason to believe that the introduction of fresh infection plays an important part in the epidemiology of cholera in the Philippine Islands.

In 1925, the Islands, including Manila, were entirely free from cholera up to the second week of June. During the following weeks sporadic cases occurred both at Manila and in the provinces, but up to the beginning of September there had been only 20 cases at Manila and 14 cases elsewhere. At the middle of September cholera broke out at Manila, 225 cases being reported in the course of four weeks, after which the outbreak diminished. A week later there was a distinct rise in the number of cholera cases reported in the provinces around the Manila Bay, where the disease remained prevalent during the rest of the year.

Far East.

The history of cholera in the Far East, in 1925, is a record of maritime transmission. Cholera cases occurring in ports reporting to the Singapore Bureau are shown in the table below, grouped in four-weekly periods:

CASES OF CHOLERA REPORTED IN MARITIME TOWNS OF THE FAR EAST IN 1925.

Ports	Four-week period ending: Jan. 31	Feb. 28	March 28	April 25	May 23	June 20	July 18	Aug. 15	Sept. 12	Oct. 10	Nov. 7	Dec. 5	Jan. 2
Calcutta (deaths)	52	84	74	194	218	82	30	34	22	29	29	100	53
Bombay (deaths)	1	0	0	0	1	0	6	1	0	0	2	0	0
Madras (deaths)	68	23	3	2	1	1	2	5	8	3	0	21	52
Rangoon (deaths)	4	6	1	8	15	10	5	3	1	2	0	4	0
Negapatam (deaths)	—	—	—	—	3	0	1	0	4	2	0	0	16
Colombo	0	0	0	0	0	2	0	0	0	2	0	0	0
Singapore	0	0	0	1	0	0	0	0	0	0	0	0	0
Penang	0	0	0	0	1	0	0	0	0	0	0	0	0
Manila	0	0	0	0	0	1	7	10	2	169	28	5	3
Bangkok	5	8	2	6	3	4	1	0	1	1	55	236	225
Saigon and Cholon	0	0	1	0	0	3	0	0	0	0	1	0	0
Shanghai	0	0	0	0	0	0	0	82	105	25	1	1	0
Amoy	0	0	0	0	0	0	0	0	1	0	0	0	0
Nagasaki	0	0	0	0	0	0	0	1	0	0	0	0	0
Yokohama	0	0	0	0	0	0	0	0	32	13	0	0	0
Kobe	0	0	0	0	0	0	0	0	6	7	6	4	0
Osaka	0	0	0	0	0	0	0	0	0	3	34	10	0

China. — Cholera is endemic in many parts of China and more or less extensive outbreaks are of frequent occurrence. Reliable information is available, however, only for a few ports. Shanghai experienced a severe cholera epidemic in 1912, when 1,307 deaths were reported among the Chinese population of the International Settlement. Another epidemic, in 1919, caused 648 deaths among the Chinese and 32 among foreigners, since when cholera has been prevalent every summer except in 1924.

Cholera outbreaks were reported in August at Soochow, Changchow, Wusieh, Nanking and in parts of Chekiang province. Cholera was also reported at Swatow in southern China, but apparently at a later date. It appeared at Shanghai in July and reached its maximum in the middle of August. The actual number of cases is uncertain, but must have been considerable as the isolation hospital was found insufficient to receive the cases. It is significant that the case mortality among Chinese admitted to the Municipal Isolation Hospital was only 15 per cent.

Japan. — Cholera is not believed to be endemic in Japan, but fairly important outbreaks have been frequent. These are stated to have originated invariably with cases of vibrio-carriers from overseas. Very special attention is paid by the Port Health Services to the detection of vibrio-carriers, but once the disease obtains a foothold in the large seaport towns it is easily spread by small coasting craft which cannot be so readily controlled.

Cholera Cases and Deaths reported in Japan, 1910-1925

Year	*Cases*	*Deaths*	*Year*	*Cases*	*Deaths*	*Year*	*Cases*	*Deaths*
1910	2,849	1,957	1916	10,371	6,260	1921	29	16
1911	9	4	1917	894	541	1922	743	427
1912	2,720	1,683	1918	0	0	1923	4	2
1913	78	22	1919	2,912	915	1924	0	0
1914	5	4	1920	4,985	3,121	1925	624	381
1915	0	0						

Japan was entirely free from cholera in 1924 and remained so in 1925 up to August 15th, when a case was reported at Nagasaki, the infection having undoubtedly been imported from China, possibly from Shanghai. During the first week of September a case occurred at Yokohama and the disease spread during the following week to Tokio and the neighbouring districts. Kobe and Osaka were infected some weeks later. At the beginning of October cases were occurring in twelve districts. The outbreak was quickly controlled and the number of cases began soon to diminish, but before the end of the year, when it could be considered definitely liquidated, cases had occurred in 23 districts. Its rapid and complete control, in spite of the extensive area affected, is remarkable.

Cholera Cases reported in the Principal Maritime Ports of Asia and the Period of Their Maximum Incidence in 1925.

Europe and Near East.

As during the previous year, cholera remained practically absent from Russia in 1925; 7 cases were reported in the Don district, and one case each in the Kuban, Voronej, the Daghestan and Kazak Republics. Alternating years of epidemics and periods of freedom from cholera characterised the appearance of this disease in Russia

throughout the last century, during which about half of the years were almost or entirely free from cholera. The last epidemic occurred from 1918 to 1922, during which period about 350,000 cases were reported; it culminated in 1921. Choleriform and phosphorescent vibrios have been found in the waters at Rostov-on-the-Don, one of the most important cholera centres in Russia. These organisms may be instrumental in immunising the population against cholera [1].

No case of cholera has been reported in 1925 in any other country west of India.

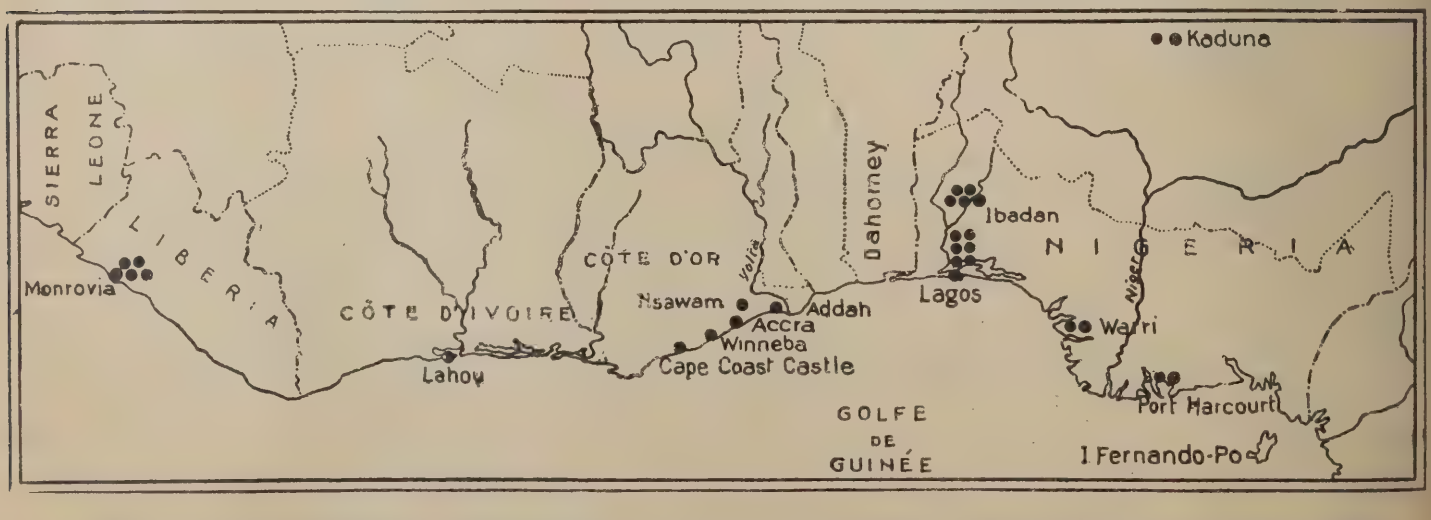
YELLOW FEVER.

Yellow fever remained exceedingly rare in 1925. No case has been reported in *Mexico*, *Central America*, *Ecuador* or *Peru*. Nor has any case been reported in *Brazilian* towns for which information has been received. Cases reported during the last five years are shown in the table below:

YELLOW FEVER CASES REPORTED THROUGHOUT THE WORLD, 1921-1925.

	1921		1922		1923		1924		1925	
	Cases	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*
Africa:										
Dahomey	0	0	0	0	5	5	9	8	0	0
Gold Coast	—	—	6	1	26	18	8	7	6	4
Ivory Coast	0	0	7	5	0	0	0	0	3	1
Liberia	—	—	—	—	—	—	—	—	4	2
Nigeria	—	—	2	1	0	0	3	3	20	12
French Sudan	—	—	3	—	0	0	0	0	3	2
Togoland	—	—	1	—	1	—	0	0	0	0
America:										
Brazil:										
Bahia	1	1	4	3	151	47	—	—	—	—
Ceara	—	—	3	2	5	5	—	—	—	—
Pernambuco	—	—	2	2	3	2	2	1	0	0
Rio de Janeiro	1	1	—	—	1	1	0	0	0	0
Colombia	—	—	—	—	39	2	—	—	—	—
French Guyana	—	—	—	—	1	1	0	0	0	0
Honduras	17	6	—	—	—	—	1	1	0	0
British Honduras	—	—	0	0	0	0	3	1	0	0
Mexico	174	60	43	25	0	0	1	1	0	0
Peru	293	115	—	—	0	0	0	0	0	0
Salvador	—	—	—	—	—	—	77	28	0	0

CASES OF YELLOW FEVER REPORTED ON THE WEST AFRICA IN 1925 *(each dot represents a case)*.



[1] See: " Le Foyer endémique de Choléra de Rostov-sur-le-Don ", by Professor W. Barikine and Dr. H. Cazeneuve (Société des Nations, Organisation d'Hygiène, document C.H. 395), Geneva, 1925.

Various endemic centres of yellow fever still exist on the *Guinea Coast*, where the last extensive epidemic occurred about twenty-five years ago. Small local outbreaks have occurred since 1922 at various points of the coast: in 1922 on the Ivory Coast, in 1923 and 1924 on the Gold Coast and in Dahomey. In 1925 there were 20 cases in the southern part of *Nigeria*—at Lagos, Ibadan, Warri and Port Harcourt. Sporadic cases occurred on the *Gold Coast*, the *Ivory Coast* and in *Liberia*. A few cases were reported inland at Tukoto in *Upper Senegal*. The disease has nowhere shown a tendency to produce serious epidemics, but the very extensive area in which sporadic cases have occurred during the last few years shows that it is still a serious menace to the whole of West Africa south of the desert belt. Its maximum seasonal incidence falls between May and August.

SMALLPOX

The year 1925 was characterised by the comparative absence of smallpox on the European continent, including Russia, as well as in Scotland and Ireland and by a marked diminution in the United States of America. The situation has been less favourable in India, the Mediterranean littoral of Africa and on the Guinea Coast. The virulent type was noticeably absent from all Europe except Spain and Russia. The disease continued to spread in the North of England but remained of a mild type. In Mexico an outbreak of smallpox occurred which was particularly virulent in the central area.

Information on the prevalence of smallpox has been received from the countries shown below:

Africa.

SMALLPOX CASES REPORTED IN AFRICA, 1919-1925.

Country:		*1919*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Algeria	Cases	812	1,172	755	184	141	483	1,747
Basutoland	Cases	—	—	521	421	617	227	51
	Deaths	—	—	53	46	14	15	0
Egypt	Cases	7,928	3,021	93	309	519	799	762
	Deaths	1,938	805	24	90	145	221	158
Gold Coast	Cases	—	—	—	—	13	153	1,468
	Deaths	—	—	—	—	0	4	150
Kenya	Cases	543	—	—	—	108	3	328
Nigeria	Cases	—	—	1,031	—	1,222	484	1,935
	Deaths	—	—	182	—	189	128	196
Nyasaland	Cases	—	—	—	—	14	—	—
Rhodesia: Northern	Cases	—	—	—	—	59	258	98
	Deaths	—	—	—	—	9	17	2
Southern	Cases	—	—	515	501	16	2	16
	Deaths	—	—	145	21	8	0	0
Sierra Leone	Cases	—	6	—	44	18	2	8
Tanganyika	Cases	—	—	1,267	390	217	30	1,388
	Deaths	—	—	151	46	33	12	466
Tunisia	Cases	—	—	—	—	279	606	1,270
Uganda	Cases	—	—	506	104	97	7	13
	Deaths	—	—	89	12	10	1	4
Union of South Africa	Cases	559	1,036	1,108	713	285	346	71
	Deaths	—	—	19	23	8	2	0
Zanzibar	Cases	4	7	160	177	236	10	1
	Deaths	1	1	56	54	60	1	0

In Algeria, a lull occurred in the late summer of 1925 in the outbreak which began in November 1924; it broke out afresh in the winter, December 1925 and January 1926 showing higher totals than had been reported during recent years in any similar period. As this report goes to press, the notifications for the first five months of 1926 show a marked increase over the corresponding months of 1925. The maximum appears to have been reached in January 1926. On the Gold Coast a sharp outbreak occurred in June and the prevalence decreased abruptly in August, but another outbreak has been reported in March 1926. The case mortality

rate has been high. In Nigeria the epidemic was most severe in February, March and April, and in Tunisia the prevalence was also greatest during the early months of 1925. In general and with the exception of South Africa, smallpox in Africa has been of a virulent type with a comparatively high case mortality.

America.

SMALLPOX CASES REPORTED IN AMERICA, 1919-1925.

Country:		*1919*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Argentine	Deaths	—	—	—	—	1	0	—
Brazil:								
Rio de Janeiro	Deaths	305	99	49	117	40	4	138*
Sao Paolo	Deaths	7	416	29	7	—	2	0
Canada	Cases	—	—	—	—	—	2,791	1,248
	Deaths	—	—	—	—	—	57	10
Ontario	Cases	3,049	5,639	3,777	977	355	594	214
Chile	Cases	9	15	11,701	8,494	3,502	410	1
	Deaths	6	13	5,131	3,621	1,551	126	0
Cuba	Cases	54	817	7,339	1,086	13	0	2
British Guiana	Cases	—	—	0	0	1	0	0
Hawaii	Cases	—	—	4	2	1	3	2
Mexico	Deaths	—	—	1,145	1,966	2,105	2,702	8,735
Panama Canal	Cases	65	25	215	14	0	0	0
	Deaths	0	0	2	0	0	0	0
Peru:								
Lima	Deaths	—	—	—	—	5	0	2
Callao	Deaths	—	—	—	—	0	0	0
Porto Rico	Cases	10	2	1	6	0	0	0
St. Lucia	Cases	—	—	—	1	0	0	0
United States	Cases	56,332	96,684	102,787	32,800	29,968	51,429	39,639
Uruguay	Cases	0	—	31	0	422	158	15
	Deaths	0	2	15	0	16	7	0

* First ten months only.

With the exception of Mexico, which appears to have suffered from an increased prevalence of a fatal form of smallpox, the situation in America in 1925 was distinctly more favourable than in recent years. The smallpox incidence in Mexico remained fairly uniform during the first nine months of the year for which reports are available; the returns for August and September were somewhat lower, which may indicate that the epidemic was then on the decline. The disease occurred in all but six of the Mexican States, but was most prevalent in Guanajuato, Hidalgo, Michoacan, Puebla and Queretaro in the central part of Mexico.

Although the decline in smallpox prevalence in the United States in 1925 was quite marked compared to 1924, the total for 1923 was still smaller, and the disease must be said to remain a serious public health problem, although fortunately the prevailing type on the whole remains mild. A very large proportion of the cases occurred during the first six months, the highest numbers being reported in January. California, Alabama and Ohio suffered most, and the Pacific and East North Central States were most affected. As usual, the New England and Mid-Atlantic States, where vaccination has been enforced for generations, had practically no cases. Isolated outbreaks of malignant smallpox occurred. In previous reports mention has been made of the epidemic at Minneapolis, where 1,182 cases and 331 deaths occurred from September 13th, 1924, to March 28th, 1925. The fatality rate was 28 per cent. Similar, although smaller, outbreaks have been noted in Kansas City, Detroit and Los Angeles, and an increasingly large proportion of deaths has occurred in American and Canadian cities.

In Canada a marked fall in the number of cases occurred in 1925. As in the United States, the disease appeared mainly in the early months of the year, but an outbreak in the Province of Quebec increased the July total. The largest number of cases (617) occurred in British Columbia, followed in descending order by Ontario (214), Manitoba (173) and Alberta (88).

Asia.

SMALLPOX CASES REPORTED IN ASIA, 1919–1925.

Country		*1919*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Aden	Cases	—	—	—	—	43	9	16
	Deaths	—	—	—	—	6	1	5
Ceylon	Cases	35	126	18	337	175	40	26
Cyprus	Cases	242	17	8	86	1	0	0
Hong-Kong	Cases	27	34	191	212	1,320	913	67
	Deaths	15	21	162	189	1,141	795	45
British India	Deaths	136,077	101,329	40,446	40,836	44,084	55,380	41,179
Iraq	Cases	—	—	475	1,862	1,692	459	832
	Deaths	—	—	—	—	581	235	313
Japan	Cases	4,055	3,167	889	679	1,922	1,702	430
	Deaths	1,115	844	212	124	381	266	81
Java and Madura	Cases	4,383	2,400	1,445	1,086	—	5,994	4,654
	Deaths	955	467	274	275	—	1,301	508
Korea	Cases	2,180	11,532	8,316	3,676	3,722	439	699
	Deaths	675	3,614	2,527	1,160	1,120	85	170
Malay States (Fed.)	Cases	—	—	76	16	32	6	51
	Deaths	—	—	0	2	9	1	7
Malay States (Non-Fed.):								
Kedah	Cases	—	—	—	—	3	23	0
	Deaths	—	—	—	—	0	3	0
Kelantan	Cases	—	—	1	—	2	0	2
	Deaths	—	—	0	—	0	0	0
Palestine	Cases	—	—	2	159	9	23	0
	Deaths	—	—	2	16	5	2	0
Shanghai	Cases (*a*)	—	—	84	34	23	46	43
	Deaths (*b*)	—	—	204	230	51	92	59
Siam	Cases	50*	85*	404*	472	1,451	588	287
	Deaths	19*	26*	102*	117	743	173	111
Singapore	Cases	14	4	156	268	32	14	10
	Deaths	3	2	33	58	2	7	2
Straits Settlements	Cases	480	105	155	330	27	10	10
	Deaths	166	43	37	80	2	3	8
Turkey	Cases	—	—	—	—	—	838	—
	Deaths	—	—	—	—	—	124	—
U. S. S. R. (Asiatic territories)	Cases	—	—	—	10,716	9,605	6,043	4,677
Transcaucasia	Cases	—	—	—	3,261	734	458	268
Siberia	Cases	—	—	—	2,454	7,221	3,758	3,287
Kirghiz Republic	Cases	—	—	—	3,838	940	1,286	568
Turkestan	Cases	—	—	—	1,163	710	541	554

(*a*) Foreigners.
(*b*) Chinese.
* Civilian Siamese year from April 1st to March 31st.

In India the number of smallpox deaths diminished as compared with 1924, but remained about the same as for 1921, 1922 and 1923. The maximum occurred in April. The Bengal Presidency and the provinces of Bihar and Orissa suffered most (8,917 deaths and 8,836 deaths respectively). Madras and Bombay Presidencies followed in order. No deaths and comparatively few cases were reported from Delhi and Baluchistan. Only 29 deaths were reported in Mysore. With these exceptions, smallpox was fairly prevalent in all other provinces. During the first four weeks of 1925 there was a fairly severe epidemic in Java and Madura, and there was a recrudescence during the last half of the year. The totals of the cases and deaths fell short of the number notified in 1924, however, although exceeding the cases and deaths in 1920, 1921 and 1922. East Java and the Island of Madura were most affected. Palestine was free from smallpox during the year. The smallpox record for Japan in 1925 is lower than that of any of the six preceding years.

Australasia.

Australia and New Zealand remained free from smallpox during 1925.

Europe.

SMALLPOX CASES REPORTED IN EUROPE, 1919–1925.

Country	*1919*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Austria	411	253	18	4	17	0	0
Belgium	42	91	21	23	31	31	12
Bulgaria	874	527	22	24	20	5	0
Czechoslovakia	11,209	4,529	1,542	70	36	9	3
Danzig	185	22	0	0	0	0	0
Denmark	0	0	7	0	0	25	0
England and Wales	294	263	315	973	2,485	3,765	5,363
Esthonia	267	435	136	50	13	4	5
Finland	1,759	77	27	91	12	1	2
France	572	392	341	172	195	210	456
Germany	5,012	2,042	688	215	17	16	24
Gibraltar	—	—	—	3	0	6	3
Greece	—	—	—	—	2,116	250	23
Hungary	—	—	131	2	9	1	2
Italy	36,365	26,453	4,644	534	495	430	204
Latvia	—	422	255	160	23	25	17
Lithuania	—	1,213	1,035	345	25	58	12
Malta	—	—	—	1	0	0	84
Netherlands	5	50	1	0	2	3	2
Norway (cities)	0	0	1	0	0	0	1
Poland	1,864	3,948	5,078	2,399	502	861	77
Roumania	20,523	3,467	2,744	865	89	9	28
Serbs, Croats and Slovenes, Kingdom of the	—	4,156	2,119	728	1,042	330	14
Scotland	9	725	106	7	3	4	2
Spain (deaths)	3,620	3,280	2,097	1,325	525	1,214	851
Sweden	7	11	2	0	0	1	0
Switzerland	3	2	596	1,153	2,126	1,234	331
Ukraine	—	34,730	28,123	11,095	3,710	1,188	501
U.S.S.R. (European territories, without Ukraine)	169,545	121,587	68,503	40,839	29,133	20,412	10,927

The comparative freedom from smallpox in Europe in 1924 continued in 1925, and there was a further reduction in several countries, notably Russia, Switzerland, Poland and the Kingdom of the Serbs, Croats and Slovenes. A greater number of cases was reported in England and Wales and in France. The type of the disease continued to be mild except in Spain, where, however, the number of deaths in 1925 was lower than in preceding years except 1923. The epidemic in Spain was most serious in Malaga and Cordova, the maximum being reached in January in the former and in October in the latter.

In England and Wales the following counties, all in the North, were most affected in descending order: Durham, Derbyshire, Yorkshire (North Riding), Northumberland and Nottingham. The remainder of the cases were scattered over 17 administrative areas, 13 cases being reported from London and 6 from the Port Sanitary Districts (London, Southampton and Liverpool). The largest number of cases was reported during the first quarter, the least during the third. The disease remained benign in type. The decrease in European Russia was most evident in the North Eastern, Central Industrial, Middle Volga and Ural areas. Reports from Asiatic Russia show a decided decrease over 1924. In Switzerland the Canton of Lucerne suffered most, followed in order by Unterwald and Berne, the largest number of cases being reported from the first and third during the first quarter, while the epidemic in Unterwald began in September and reached its height in December. Scattered cases were reported from 9 other cantons. The benign type of the disease prevailed throughout, and it was evident that the epidemic which began in 1921 was coming to an end.

TYPHUS

Europe

The decrease of typhus which followed the great post-war epidemics in Eastern Europe continued in 1925, during which year the incidence has certainly been lower than at any time since 1907. The number of typhus cases reported in Europe during the last six years is shown below. A few countries of Northern and Western Europe, where typhus has been exceedingly rare within recent years, are omitted from the table.

TYPHUS CASES REPORTED IN EUROPE, 1920–1925.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Austria	86	81	23	3	0	0
Bulgaria	2,885	874	488	413	197	217
Czechoslovakia	3,019	970	321	366	44	204
Esthonia	4,125	356	247	63	43	21
Germany	483	533	386	27	8	3
Greece	—	—	—	7,607	266	102
Hungary	—	73	17	385	229	35
Italy	113	60	0	2	2	0
Latvia	4,631	1,288	1,480	430	290	96
Lithuania	5,302	3,004	3,409	830	618	221
Poland	168,097	49,547	42,724	11,185	7,706	4,196
Roumania	46,206	8,189	3,902	5,173	3,194	1,892
Kingdom of the Serbs, Croats and Slovenes	1,582	1,054	232	351	319	388
Spain *	155	73	80	35	20	10
Ukraine	591,842	110,891	344,842	31,307	14,219	9,123
U.S.S.R. (European territories, without Ukraine)	2,979,560	539,216	975,762	169,508	94,978	52,326

* Deaths only.

About 70,000 typhus cases (53 per 100,000 inhabitants) were reported in 1925 on the whole area of the *Soviet Union*. This is the lowest incidence recorded since 1907, when 52,000 cases were recorded on Russian territory, giving an incidence of 35 per 100,000 inhabitants. The decrease compared with 1924 averaged 44 per cent and was general throughout the Union. The incidence was, on the whole, highest in the north and the west and lowest in the south; it ranged from 82 to 115 per 100,000 in Northern Russia, including the Viatka-Vietluga area, and was 97 in the western districts, where White Russia especially remained seriously infected. It was 68 in the Central Industrial Area, diminishing southwards to 48 in the Central Black Soil area, 36 in the Ukraine, 26 in Crimea, 13 in North Caucasus and the Don area and 9 in Transcaucasus. The typhus incidence in the Middle Volga and the Ural areas was about the same as in Central Russia and diminished similarly southwards to 45 in the Lower Volga area and 11 in Central Asia.

TYPHUS CASES REPORTED IN UNION OF SOCIALIST SOVIET REPUBLICS, 1923–25.

Geographical Areas	*Number of cases*			*Decrease (per cent) 1924-25*	*Rate per 100,000 in 1925*
	1923	*1924*	*1925*		
North-Western	6,084	7,606	4,962	35	88
North-Eastern	6,101	4,302	1,926	55	82
Western and White Russia	10,569	11,831	8,661	27	97
Central Industrial	34,454	27,972	12,844	54	68
Central Black Soil	15,659	8,888	5,144	42	48
Ukraine	31,307	14,219	9,123	36	36
Crimea	828	280	155	45	26
Middle Volga	22,319	12,071	6,575	46	70
Lower Volga	6,881	5,894	2,290	61	45
Viatka-Vietluga	22,181	4,926	3,900	21	115
Ural	39,588	9,608	4,933	49	63
North Caucasus and Don	4,844	1,600	936	42	13
Transcaucasus	2,663	1,447	496	46	9
Central Asia	2,761	2,458	1,238	50	11
Siberia	26,124	11,363	6,012	47	54
Railways and Waterways	10,527	2,400	1,220	49	—
Total	242,890	126,865	70,415	44	53

Typhus has constantly diminished in *Poland* since the time of the great post-war epidemics, and 1925 brought again an important decrease compared with the previous year. The highest incidence was recorded in the eastern provinces of Vilna, Novogrodek, Lublin and in Eastern Galicia, but it was lower, nevertheless, than in White Russia. In the western provinces of Pomerania, Posen, Silesia and Lodz there were only a few sporadic cases. The decrease has been greatest in Central Poland (the old Congress Poland) and least significant in the provinces bordering on White Russia. The incidence averaged 27.7 per 100,000 inhabitants in the nine eastern provinces shown in the first column below and 4.2 in the eight provinces forming the western half of the country.

Typhus Cases reported in Poland, 1923–25.

Provinces	*1923*	*1924*	*1925*	*Provinces*	*1923*	*1924*	*1925*
Vilna	1,574	1,071	445	*Carried forward*	8,658	6,025	3,604
Bialystock	719	554	237	Warsaw	578	479	86
Novogrodek	871	385	422	Warsaw City	143	138	67
Polesia	531	318	263	Kielce	916	608	214
Volhynia	370	546	297	Lodz	329	176	35
Tarnopol	698	670	377	Cracow	459	150	162
Stanislavov	1,146	650	400	Silesia	5	2	2
Lvov	1,560	987	754	Posen	9	8	1
Lublin	1,189	844	409	Pomerania	21	99	9
	8,658	6,025	3,604	Total	11,118	7,685	4,180

A marked improvement compared with the previous year took place also in *Roumania*. The incidence remains highest in the northern and eastern part of the country, especially in Bessarabia, where 799 cases were reported (33 per 100,000 inhabitants), and in Bukovina, where there were 320 cases (40 per 100,000). In Moldavia and Dobrudja there were 509 cases (rate: 19), while the incidence was much lower in Wallachia and Oltenia (120 cases, rate: 2.5) and in Transylvania and the Banat (86 cases, rate: 1.3).

Small local outbreaks of typhus persisted in *Czechoslovakia*, where 193 cases were reported in Sub-Carpathian Ruthenia, and in the *Kingdom of the Serbs, Croats and Slovenes*, where there were 212 cases in Bosnia and 176 in other provinces. The disease was present also in a few districts of *Bulgaria* and *Greece*. Only 338 cases were reported in the three *Baltic Republics* as against 951 in 1924. Typhus did not occur — or at least was of no importance — in the remainder of Europe.

The case mortality of typhus in Eastern Europe is usually between 8 and 10 per cent. In 1925 it was 8 per cent in Poland, 8.9 per cent in the City of Leningrad, 11.3 per cent in Roumania and 6.9 per cent in Bulgaria. It seems that the outbreak in Bosnia has been of a fairly severe character, 13.5 per cent of the reported cases having proved fatal. The cases occurring in Sub-Carpathian Ruthenia were exceptionally mild, the case mortality being only 1 per cent.

Africa

Typhus is known to have existed in Northern Africa for at least a century. It is common in South Africa but does not exist in the tropical zone. Typhus occurs, in addition to the countries shown below, in Morocco, but not a single case has been reported in the remainder of Africa.

Typhus Cases reported in Africa, 1920–1925.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Algeria	1,078	6,360	1,233	1,666	471	544
Tunisia	—	—	—	357	209	404
Egypt	13,253	4,487	2,489	1,935	1,683	1,314
Union of South Africa	11,276	9,157	8,531	2,922	1,570	1,114
Basutoland	—	503	402	958	500	53

A slight recrudescence of typhus occurred in 1925 in *Tunisia* and in the departments of Algiers and Constantine of *Algeria*; only 17 cases were reported in the department of Oran and 7 cases in the southern territories. The case mortality was 8 per cent.

The incidence of typhus has constantly decreased in *Egypt* since 1919; 291 deaths were attributed to this disease in 1925 as against 588 the previous year and 5,573 in 1919. The disease is most prevalent in Lower Egypt, where there were (including the governorates) 1,157 cases, and especially in the province of Beheira (499 cases); 157 cases were reported in Upper Egypt. The seasonal maximum occurs here as in Algeria between April and June, which is noteworthy in view of that it always occurs during the winter or early spring in Eastern Europe.

Typhus remained endemic in all provinces of *South Africa*, but is least prevalent in Transvaal. The incidence has diminished since 1920. It is far more common and also more severe among the natives than among the inhabitants of European extraction. The case mortality was, in 1925, 12 per cent among the natives and 3.4 per cent among the white population.

America.

Two important centres of typhus exist in America: in Northern Chile and the Peruvian Andes, and in Mexico. The disease is not endemic elsewhere.

Statistics regarding the prevalence of typhus in *Peru* are not available. Its incidence in *Chile* has constantly diminished in recent years. The seasonal maximum occurs in October and November, which correspond to April and May in the northern hemisphere.

Typhus Cases and Deaths reported in Chile, 1919–25.

	1919	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Cases	14,517	7,138	4,503	4,469	3,294	2,047	965
Deaths	2,804	1,182	569	903	642	330	133

In *Mexico*, 657 deaths from typhus were reported in 1925, mostly from the States of Central Mexico. Serious epidemics have occurred in the City of Mexico in 1901–02, 1906 and 1915–16, since when there has been a steady decrease. The incidence has, during the last six years, been much lower than ever before.

Mortality from Typhus in Mexico City, 1914–25.

Year	*Deaths*	*Rate per 100,000*	*Year*	*Deaths*	*Rate per 100,000*
1914	171	33	1920	57	9
1915	1,317	248	1921	81	13
1916	1,831	337	1922	95	15
1917	462	83	1923	41	6
1918	204	35	1924	—	—
1919	147	25	1925	35	5

Typhus is of rare occurrence in the *United States*; 154 cases were reported in 1925, of which 53 were in Alabama and 40 in Texas, as against 102 in 1924 and 62 in 1923.

Asia.

In Asia, typhus is seriously prevalent only in Siberia and other territories of the *Soviet Union*, of which mention has already been made. Cases occur in *Turkey*, *Syria*, *Palestine*, *Iraq*, *Persia*, *Japan*, *Korea* and *Manchuria* but do not constitute any serious problem of public health in these countries. It is exceedingly rare, if not quite absent, elsewhere.

Typhus Cases reported in Asiatic Countries, 1920–25.

(Excluding the Territories of the U.S.S.R.)

Countries	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Iraq	—	61	48	27	9	2
Japan	66	171	23	14	14	28
Korea	78	73	63	27	540	225
Palestine	—	63	33	35	37	47
Syria	—	31	6	21	2	—

RELAPSING FEVER

The almost complete disappearance of relapsing fever during the last couple of years from Europe, with the exception of certain parts of Russia, as well as from the Mediterranean zone of Africa, is one of the most noteworthy epidemiological occurrences of recent years. The last outbreak of this disease, which was formerly endemic in an intermittent manner in many parts of Europe, occurred in 1922, since when the decrease has been very rapid. The morbidity rate for the whole territory of the *Soviet Union* was 14 per 100,000 inhabitants, which is the lowest figure on record since 1905, with the exception of the years 1914–16, when the reporting may have been incomplete owing to the war. The returns for *Poland* and *Roumania* are the lowest on record; of the 104 cases reported in Poland, 61 occurred in the province of Vilna. Only 36 cases were reported in the remainder of Europe.

RELAPSING FEVER CASES REPORTED IN VARIOUS EUROPEAN COUNTRIES, 1920–25.

Countries	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Czechoslovakia	19	14	31	0	0	0
Esthonia	978	118	104	8	1	2
Germany	—	53	31	4	3	7
Greece	—	—	—	—	91	1
Latvia	547	275	116	10	3	2
Lithuania	732	1,031	910	13	11	9
Poland	7,188	13,850	41,207	2,067	366	104
Roumania	19,452	4,663	444	152	56	31
Kingdom of the Serbs, Croats and Slovenes	23	69	21	13	15	15
Ukraine	362,075	247,089	467,893	54,814	4,785	1,379
U.S.S.R. (other territories in Europe)	1,570,604	698,147	942,460	149,493	30,818	12,822

The incidence of relapsing fever was lower in 1925 than during the previous year in all districts of the *Soviet Union* except the north-western. It was the governments of the latter area (Pskov, Novgorod, Czerepovetz) which had suffered least from the former epidemics. The decrease averaged 63 per cent for the whole Union, was somewhat higher in Siberia, the Ural district and in Northern Russia, and lower in Western Russia and on the Volga. The highest incidence was reported in the Lower Volga and Ural districts and in the Northern Caucasus.

NUMBER OF RELAPSING FEVER CASES REPORTED IN U.S.S.R., 1923–25.

Geographical Areas	*Number of cases*			*Rate per 100,000*
	1923	*1924*	*1925*	*in 1925*
North-Eastern	1,429	325	18	1
North-Western	1,154	501	816	14
Western and White Russia	5,384	817	435	5
Central Industrial	10,532	2,022	819	4
Central Black Soil	18,305	2,857	1,999	19
Ukraine	54,814	4,785	1,379	5
Crimea	457	186	199	33
Middle Volga	21,862	4,635	1,940	21
Lower Volga	9,031	3,021	2,008	40
Viatka-Vietluga	7,279	485	158	5
Ural	60,134	11,190	2,602	33
North Caucasus and Don	13,926	4,779	1,828	9
Transcaucasus	1,609	1,782	737	13
Central Asia	7,902	4,675	1,621	14
Siberia	28,561	6,930	1,731	15
Railways and Waterways	15,892	1,545	350	—
Total	258,271	50,535	18,640	14

While relapsing fever has practically disappeared from the Mediterranean coast of Africa, extremely severe epidemics have occurred in recent years in the countries south of the desert belt. Data for these districts are, unfortunately, very incomplete.

In *Egypt*, where 591 deaths were ascribed to relapsing fever in 1919, it has caused no death during the last two years. There were only 6 cases in *Tunisia* in 1925 and none in *Algeria*.

Relapsing Fever Cases reported in Africa, 1920–25.*

	1920	*1921*	*1922*	*1923*	*1924*	*1925*
Egypt	2,898	1,208	172	39	5	3
Gold Coast	—	—	—	160	16	0
Nigeria	0	0	—	43	733	1,276†
Northern Rhodesia §	—	—	—	42	36	23
Nyasaland §	—	24	47	74	82	62
Tanganyika §	—	29	44	119	148	—
Uganda §	—	269	302	283	852	—

* For French West Africa, see text below.
† There were in addition 439 deaths from relapsing fever in Northern Nigeria.
§ The cases reported in these countries may partly or wholly refer to the African tick fever (spirochete Dutton).

The severe epidemic of relapsing fever which has caused serious ravages in *French West Africa* since 1921 extended further east in 1925. It is uncertain whether the disease was present or not in these territories in the preceding years, but epidemics appear to have occurred in the seventies of last century. The infection may or may not have been imported in 1921 by native soldiers returning from foreign service. The first cases were observed in May 1921 at Bamako in the French Sudan; the disease spread rapidly to the whole of this colony and further east to the colony of Upper Volta, the whole territory contained within the bend of the Niger becoming more or less affected. Nearly 110,000 cases and about 20,000 deaths were reported during the first two years of the epidemic in the French Sudan (2,450,000 inhabitants). During the same period 2,000 deaths were attributed to relapsing fever in the Upper Volta. In 1924 the disease was less prevalent in the Sudan; 55 deaths were reported at Timbuctoo in January and minor outbreaks in other localities. Nor was the Upper Volta much affected during the early part of the year, but in October again there were serious local outbreaks. In March, outbreaks occurred in the western districts of the Niger territory, occasioning about 500 deaths. In October, the disease appeared further east at Zinder, causing about 2,600 deaths during that month and November. Following the caravan routes, the epidemic spread eastwards to the Chad territory and southwards to Northern Nigeria, where 528 deaths were reported in 1924 and 314 in 1925.

The outbreaks in the Chad colony were severe, 341 deaths being reported in January and 963 deaths in February 1925, and they extended east nearly to the frontier of the Anglo-Egyptian Sudan. There were outbreaks also in the Cameroons, where 777 cases were reported in May and 201 in September 1925. The disease appeared again in 1925 in its original centres in the Upper Volta (1,565 cases and 401 deaths), reaching this time a maximum in June. There were numerous cases also in the Niger territory, in Dahomey and in the French Sudan.

The figures quoted above give an inadequate impression of the seriousness of these epidemics, since cases and deaths were by no means reported everywhere. The reports contain, besides definite data for certain localities, frequent remarks to the effect that numerous deaths occurred without any specification of numbers being possible. This extensive area is very thinly populated, and the towns and villages are mostly small; the loss of life has therefore proportionately been very serious. In one village of the Upper Volta 55 per cent of the population died, and at Leo — a small town of 5,000 inhabitants — 9 per cent died in three months.

The case mortality has been extremely high and seems to have averaged about 20 per cent; it has actually been observed to average 44 per cent in a number of villages in the Upper Volta. A case mortality of from 15 to 20 per cent has at times been observed in Egypt, while in Algeria and Morocco usually only 1 or 2 per cent of the relapsing fever cases are fatal. In Eastern Europe the case mortality has rarely exceeded 5 per cent and has usually been 2 or 3 per cent, frequently even less. The causative agent of these West-African epidemics is, nevertheless, the same as in Eastern Europe, the spirochete Obermeieri, and not the spirochete Dutton, which is connected with the African tick fever, occurring in the Congo, in Uganda, in Madagascar and in various localities of South Africa.

UNDULANT FEVER

Undulant fever occurs in most Mediterranean countries but seems to be very prevalent nowhere except Malta. 110 cases were reported in *France* in 1925, where it was made notifiable the previous year.

The disease has been made notifiable in *Italy* only during recent years, and the information is therefore incomplete. The disease is most prevalent in Sicily and the southern provinces. It is stated that cases have occurred lately also in the provinces of Arezzo, Massa, Turin and Florence. About 400 cases were reported in 1924 in the whole of Italy.

The incidence has diminished in *Malta* in recent years. The seasonal maximum occurred in June in France and in July in Malta.

Undulant Fever Cases and Deaths reported at Malta, 1922–25.

	1922	*1923*	*1924*	*1925*
Cases	1,102	1,060	940	662
Deaths	59	41	49	42

There were 46 cases in *Tunisia* in 1925 as against 81 the previous year. A few cases were reported in the *Anglo-Egyptian Sudan*, *Uganda*, *Southern Rhodesia* and the *Union of South Africa*.

DYSENTERY

The existing morbidity statistics hardly add to our knowledge of the prevalence of dysentery in tropical and sub-tropical countries where this group of diseases is of most importance. The reporting of contagious diseases in these countries is rarely efficient excepting for the quarantine diseases, and even where statistics of causes of deaths are available they furnish but little useful information, as they invariably contain a high proportion of unknown or ill-defined causes. Differentiation of the various forms of dysentery prevailing in the tropics, which, from an ethiological point of view, are quite different diseases, is rarely reliable.

The importance of dysentery as a cause of death is shown by the mortality statistics of Indian cities. The death rate from dysentery in 1925 was in Madras 433 per 100,000 inhabitants, in Calcutta 215, and in Bombay 60; it was 151 in Singapore. The mortality is probably not much lower in other countries where similar climatic and sanitary conditions obtain. It is therefore obvious that the few hundred dysentery cases which are reported annually in the various tropical colonial possessions in no way correspond to the real incidence of the disease.

In certain parts of Europe and also in Japan, where bacillary dysentery alone appears to prevail and where the case registration is far more complete than in the tropics, the statistics are more significant. Data are given below for such countries where bacillary dysentery is or has been of practical importance within recent years and where the data can be regarded as reasonably accurate or at least sufficiently complete to show the trend of the incidence.

Dysentery Cases reported in Various Countries, 1920–25.

Countries	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Austria	4,212	4,733	1,196	791	535	346
Bulgaria	698	569	740	489	389	251
Czechoslovakia	8,211	8,238	1,453	1,539	1,347	705
Esthonia	3,459	1,198	356	64	125	38
Finland	573	395	209	192	189	175
France	381	1,852	167	239	170	148
Germany	—	31,624	5,036	8,449	5,789	4,775
Hungary	—	5,230	2,455	4,321	3,699	1,754
Italy	2,666	2,201	1,197	1,118	1,062	982
Latvia	5,479	1,162	913	114	276	150
Lithuania	4,435	1,163	356	184	180	109
Poland	31,020	32,944	15,134	5,314	10,492	3,285
Roumania	3,393	2,958	996	1,391	1,420	979
Kingdom of the Serbs, Croats and Slovenes	11,138	13,279	2,878	3,977	3,084	1,311
Ukraine	—	55,291	50,138	25,816	45,293	24,343
U.S.S.R. (European territories, without Ukraine)	324,389	164,802	249,757	147,307	217,480	196,796
Japan	12,738	12,445	15,134	20,270	18,647	14,713
Korea	974	978	1,932	1,195	1,443	2,030

Dysentery has, on the whole, been decreasing in Europe since the epidemics of 1920 and 1921, but relatively important endemic centres still exist in Central and Southern Europe as well as in Russia. The decrease of dysentery during last year has been most marked in Poland, where the reported cases were only one-third as numerous as in 1924. Western and Central Galicia remains the most important endemic centre. The highest number of cases was reported in the provinces of Cracow and Lvov. Dysentery cases occur in nearly all parts of *Germany*, although the total number of cases reported was less than 5,000 in 1925 as against more than 31,000 in 1921. The most important dysentery centre in Germany is in Westphalia and the Rhineland, where 725 cases were reported in the province of Dusseldorf and 724 in the province of Arnsberg. A considerable number of cases was reported in Silesia and Saxony, but the disease was relatively rare in East Prussia and elsewhere in the Baltic provinces.

The incidence of dysentery has decreased constantly since 1921 in *Czechoslovakia*; only 705 cases were reported in 1925, largely in Sub-Carpathian Ruthenia and in Slovakia, which are nearest to the Galician dysentery centre. The decrease of dysentery has been equally marked in *Hungary*, *Roumania* and the *Kingdom of the Serbs, Croats and Slovenes*. In the latter country the highest numbers of cases were reported in Slovenia, Croatia and Bosnia.

The number of cases reported in *Italy* is not very considerable, and the disease is of practical importance only in the province of Venice, which is close to the Slovene endemic centre. Dysentery is of little importance in Western and Northern Europe.

The seasonal maximum occurred in 1925 at the end of August in all the countries north of the Pyrenees, Alps and Balkans. It is noteworthy that there was hardly a week's difference between the time of culmination of the incidence in all these areas.

Dysentery was somewhat less prevalent in *Russia* in 1925 than in 1924. There was a very marked decrease in the Ukraine and the Central Black Soil districts and to a lesser extent also in the remainder of Western and Central Russia. The incidence was, on the other hand, considerably higher in 1925 than in 1924 in the Caucasus and in the Ural and Viatka-Vietluga areas.

Dysentery Cases reported in the U.S.S.R. per 100,000 Population, 1923–25.

Geographical Areas	*1923*	*1924*	*1925*
North-Eastern	66.5	185.5	336.0
North-Western	72.2	212.1	151.2
Western	104.1	193.4	120.8
Central Industrial	125.3	249.0	178.4
Central Black Soil	195.9	299.0	154.1
Middle Volga	281.7	310.6	245.3
Lower Volga	211.6	295.4	213.2
Viatka-Vietluga	270.3	319.1	705.7
Ural	303.2	406.2	515.3
North Caucasus	118.9	191.1	239.8
Ukraine	—	177.9	98.4
Siberia	255.0	413.5	298.8
Kirghiz	108.3	119.6	181.3
Turkestan	37.7	41.8	67.6
Transcaucasus	45.7	186.3	276.8

When comparing the incidence of dysentery with that of typhoid fever in Russia, it is seen that the two diseases are about equally prevalent in European Russia west of the Volga. Dysentery is less prevalent than typhoid fever in the Ukraine. This proportion between the two diseases changes abruptly at the Volga, where dysentery becomes three times as prevalent as typhoid fever. The difference is still more marked in the Ural and the Viatka-Vietluga areas and in Transcaucasus, where dysentery is from four to six times as prevalent as typhoid fever. Dysentery predominates in Siberia as far east as Lake Baikal, east of which it again becomes rarer.

Bacillary dysentery is not uncommon in *Japan* and in *Korea* but is less prevalent than typhoid fever. The number of dysentery cases reported in Japan increased up to 1923, since when there has been a gradual decline.

ENTERIC FEVER

Africa.

Enteric fever is only reported accurately in a few countries. No information is available on the prevailing types.

CASES OF ENTERIC FEVER REPORTED IN VARIOUS COUNTRIES OF AFRICA, 1920–25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Algeria	820	1,288	751	712	750	615
Egypt	1,799	1,380	1,689	1,765	1,794	1,978
Mauritius	168	288	224	150	107	—
Tripolis and Cyrenaica	—	—	—	—	217	228
Tunisia	—	—	—	655	821	437
Union of South Africa	5,292	4,511	2,623[1]	4,163[2]	3,859[2]	4,390[2]

[1] January to June only.
[2] Years ending June 30th, 1923, 1924 and 1925.

Enteric fever has been less prevalent in 1925 than in 1924 in *Algeria* (615 cases, against 750), Tunisia (437, against 821), Cyrenaica (79, against 103), but a greater number of cases were reported in Egypt (1,978 cases in 1925 and 1,794 in 1924) and in Tripoli (149 in 1925 and 114 in 1924). The months showing the greatest incidence were September and October.

Egypt. — While there was a much lower prevalence of enteric fever during 1920 than in 1919, this disease — according to official reports — has steadily increased in prevalence from 1921 to 1925. The reported case mortality during 1925 was 28.8 per cent as compared with 25.8 per cent in 1924, and 26.4 per cent in 1923.

The high prevalence of this disease in Egypt may be inferred from the number of deaths reported in Egyptian cities:

City	*1919*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*	*Death-rate per 100,000 population in 1923*
Alexandria	165	78	75	69	64	77	82	16.7
Cairo.	330	226	168	247	283	266	363	44.5
Cities of the Suez Canal zone	31	31	31	45	35	19	15	8.5

The data received from the *French African Colonies* — incomplete as they are — indicate the presence of this disease in these territories.

The *Union of South Africa* reported during the fiscal year ending June 30th, 1925, 531 cases less than in the previous year. Out of 4,390 reported cases, 2,291 occurred among whites and 2,099 among natives. 2,058 cases were reported in the Cape province, 83 in Transkei, 672 in Natal, 279 in the Orange Free State, and 1,298 in the Transvaal. An important outbreak (193 cases) occurred in the town of *Uitenhage*, which had during the previous years shown a constant and serious prevalence of the disease — a condition which, in South Africa, almost invariably indicates bad sanitation and excessive fly prevalence.

America.

CASES OF ENTERIC FEVER REPORTED IN VARIOUS COUNTRIES OF AMERICA, 1920–25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Canada	—	—	—	—	2,229	1,985
of which Ontario .	713	725	576	1,665	849	856
Cuba	2,190	9,592	2,773	3,001	3,122	2,023
Grenada	—	88	144	115	107	71
British Guiana . . .	795	489	461	384	320	—
Hawaii	178	230	183	176	119	91
Panama Canal Zone .	—	36	31	24	19	24
Porto Rico	225	429	301	870	810	794
Trinidad	—	820	732	648	1,012	—
United States	33,825[3]	46,780[4]	33,916[4]	32,374[4]	33,446[4]	48,313[5]
Uruguay	666	816	636	610	455	714

[3] Data for 35 States. [4] Data for 45 States. [5] Data for 47 States.

In *Canada*, 1,985 cases with 412 deaths (20.8 per cent fatality) were notified during 1925 as against 2,229 cases with 445 deaths (20 per cent fatality) during the previous year. The provinces of New Brunswick, Nova Scotia and Quebec recorded a lower, and Manitoba, Saskatchewan, Alberta and British Columbia a higher, incidence in 1925 than in 1924.

United States. — Forty-seven States (District of Columbia not included) notified during 1925 48,318 cases of enteric fever, of which 22,368 (46 per cent) occurred in August, September and October.

More reliable information on typhoid fever in the United States is obtainable from a special survey on typhoid fever mortality in 77 cities with more than 100,000 population, the results of which have been published in the *Journal of the American Medical Association* (1926).

30	cities	had	mortality	rates	from	0.0	to	1.9
28	»	»	»	»	»	1.9	to	4.9
13	»	»	»	»	»	5.0	to	9.9
6	»	»	»	»	»	10.0	to	30.0

The geographical distribution was as follows:

New England States. — Twelve cities have reported 56 deaths (death rate per 100,000 inhabitants, 2.42), the highest death rate being that of Boston.

Middle Atlantic States. — Sixteen cities reported 333 deaths (mortality rate, 2.95), showing in the mortality rates fluctuations between 7.0 and 0.9. The higher mortality rate in New York (3.3 in 1925 as against 3.1 in 1924) was due in part to the oyster-born infection which started at the end of 1924 and continued in the first quarter of 1925.

South Atlantic States. — Six cities notified 110 deaths (mortality rate, 8.12).

East North Central States. — Fourteen cities reported 163 deaths (death rate, 2.22).

East South Central States. — Four cities notified 92 deaths (mortality rate, 16.1).

West North Central States. — Eight cities recorded 64 deaths (mortality rate, 3.09).

Seven cities in the *West South Central States* reported 103 deaths with a death rate of 14.4.

In the cities of the *Mountain and Pacific States*, 72 deaths occurred (death rate, 2.2).

The chronological course of the mortality rates from 1910 to 1925 of 59 cities in the United States with a population of 100,000 and over shows a rapid decline from 19.61 in 1910 to 3.54 in 1920, while the death rate of the successive years shows a fluctuation between 3.71 in 1921 and 3.09 in 1924, and 3.43 in 1925.

Mexico reported 6,739 deaths from enteric fever in 1925. In *Porto Rico*, 794 cases were reported in 1925 as compared with 810 the previous year. A considerable decline in the typhoid fever prevalence occurred in Cuba (2,023 cases in 1925 against 3,122 in 1924). The disease showed a higher incidence in 1925 in the *Dominican Republic* (245 cases against 199 in 1924). The number of cases and deaths in the *Panama Canal Zone* and in the cities of Panama and Colon was 24 and 3 respectively, against 19 cases and 25 deaths during 1924.

South America. — Information for the whole country was received only from Uruguay and Chile. Uruguay reported 714 cases with 263 deaths against 455 cases and 196 deaths in 1924. In Chile, 1,396 cases with 147 deaths (10.5 per cent case mortality) were reported in 1925.

The following table shows the mortality from typhoid fever for several South American cities during 1920-25, for which current reports have been received.

City	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*	*Death rate per 100,000 population in 1925*
Sao Paolo	101	203	100	136	217	459	53.0
Bahia	—	—	—	—	128	29	8.1
Rio de Janeiro . .	128	132	152	131	115	97	6.8
Asuncion	—	32	30	41	39	51	55.8
Buenos Aires . . .	170	158	156	142	96	136	7.05
El Callao	—	17	24	19	8	15	9.3
Lima.	—	87	74	71	48	59	31.1
Montevideo	106	113	131	171	132	201	47.6
Habana	—	113	138	91	204	82	20.5

Asia.

Cases of Enteric Fever reported in Various Countries of Asia, 1920–25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Ceylon (deaths)	871	668	542	597	816	—
Cyprus	395	360	346	314	200	—
Iraq	—	87	104	158	134	313
Japan	61,659	56,424	59,537	57,953	63,732	50,829
Korea	2,360	2,835	4,274	3,153	3,574	5,480
Palestine	—	459	271	279	329	785
U. S. S. R. (Asiatic territories):						
Kirghiz Republic	—	8,563	10,274	1,801	1,910	1,732
Siberia	—	20,213	17,585	14,071	13,432	10,829
Turkestan	—	4,522	2,660	1,059	731	1,628
Transcaucasia	—	—	4,835	1,694	3,498	2,494
Straits Settlements (deaths)	103	117	53	48	47	96
Aden Protectorate (cases)	—	—	—	2	1	12

Of the Asiatic countries supplying current reports on the prevalence of enteric fever, less cases have been reported in 1925 than in 1924 in Asiatic Russia and Japan, but more cases have been notified in Palestine, Iraq, Korea and Java.

U. S. S. R. (Asiatic territories) notified 16,683 cases of typhoid fever in 1925 against 19,571 in the previous year. This decline took place chiefly in Siberia and the Far Eastern Republic; the Kirghiz Republic showed only a slight improvement, while there was an increase in the Republic of Turkestan.

Cases per 100,000 Population.

	1923	*1924*	*1925*
Siberia and Far Eastern Republic	127.0	120.4	97.1
Republic of Kirghiz	40.2	44.5	40.4
Republic of Turkestan	15.0	10.4	23.2

In *Japan*, distinction is made between typhoid fever and paratyphoid fever. Both diseases, according to official records during 1925, showed a considerable decline as compared with 1924. The case mortality of typhoid fever during 1925 was 19.8 per cent; of paratyphoid fever 8.8 per cent.

Typhoid and Paratyphoid Fever Cases and Deaths reported in Japan, 1919–25.

Year	*Typhoid Fever*		*Paratyphoid Fever*	
	Cases	*Deaths*	*Cases*	*Deaths*
1919	54,706	11,156	7,435	830
1920	53,925	10,327	7,734	850
1921	50,133	10,634	6,291	802
1922	52,419	11,218	7,118	835
1923	52,636	11,371	5,317	690
1924	58,354	16,643	5,378	634
1925	45,765	9,080	5,064	453

In *Formosa*, 679 cases were reported during 1925, showing the highest prevalence between June and September. Incomplete reports from *Indo-China* show that this disease is prevalent in all the provinces.

Australia. — The number of cases of enteric fever reported in Australia in 1925 was considerably lower than that for each of the two previous years, 1,350 cases having been reported as against 1,962 in 1924 and 2,271 in 1923. The disease is most prevalent in summer — that is, during the first quarter of the year.

Cases of Enteric Fever reported in Australia and New Zealand, 1919–25.

States	*1919*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
New South Wales	857	1,016	949	706	873	768	533
Victoria	263	433	532	294	410	288	161
Queensland	724	731	468	400	516	501	280
South Australia	125	176	251	143	121	93	96
West Australia	236	367	391	244	261	231	229
Tasmania	163	214	308	137	90	81	50
Total Australia	2,368	2,937	2,899	1,924	2,271	1,962	1,350
New Zealand	477	389	451	539	276	354	275

Europe.

A noteworthy increase in the prevalence of enteric fever during 1925 has taken place in several European countries — for instance : Austria (increase of 499 cases), Czechoslovakia (191), France (294), Greece (333), Northern Ireland (183), Norwegian cities (246) and Switzerland (109). In most countries, however, there has been a considerable decline as compared with 1924 — namely: in Bulgaria (3,683 less cases), England and Wales (1,344 less), Finland (132), Germany (1,745), Hungary (981), Italy (3,219), Latvia (551), Lithuania (143), Poland (2,263), Roumania (427), Ukraine (3,202), Kingdom of the Serbs, Croats and Slovenes (2,194) and Spain (543 less deaths).

Enteric Fever Cases reported in Europe, 1920–25.

	1920	*1921*	*1922*	*1923*	*1924*	*1925*
Austria	2,761	4,288	2,303	2,043	2,093	2,592
Belgium	1,475	1,429	1,090	1,404	907	1,113
Bulgaria	3,080	1,915	2,867	2,799	7,127	3,444
Czechoslovakia	7,399	9,331	6,612	5,508	6,645	6,836
Danzig	244	179	74	130	144	119
Denmark	430	422	477	560	482	343
England and Wales	3,109	3,835	2,414	3,211	4,123	2,779
Esthonia	1,150	1,175	828	698	1,106	1,054
Finland	1,499	1,356	1,298	1,653	1,687	1,555
France	7,673	8,116	4,787	6,297	6,493	6,787
Germany	—	18,808	10,993	13,162	14,221	12,476
Hungary	—	6,880	5,477	4,880	6,994	6,013
Northern Ireland	—	—	—	168	127	310
Irish Free State (deaths)	—	—	96	142	123	102
Italy	32,487	35,527	25,316	27,626	27,108	23,989
Latvia	1,615	1,431	1,011	1,043	1,570	1,007
Lithuania	2,421	1,277	1,140	799	758	615
Luxemburg	—	157	96	44	79	48
Malta	—	—	438	273	307	278
Netherlands	2,223	2,004	1,134	1,391	1,187	1,159
Norway (cities)	394	607	223	170	161	407
Poland	21,466	30,067	22,056	14,037	16,288	14,025
Roumania	6,512	6,777	5,954	5,273	7,864	7,437
Saar Territory	—	238	210	152	194	199
Scotland	743	595	439	794	486	*236
Kingdom of the Serbs, Croats and Slovenes	3,851	4,617	3,906	3,549	6,403	4,209
Spain (deaths)	6,998	7,041	5,528	5,202	4,663	4,218
Sweden	1,266	1,123	896	808	1,401	1,467
Switzerland	336	451	342	456	304	415
U.S.S.R. (European territories, without Ukraine)	305,715	253,977	220,051	77,750	105,086	105,062
Ukraine	—	122,085	97,654	31,514	37,330	34,128

* Data for 16 principal towns.

The distinction between typhoid and paratyphoid fever is only made in a few European countries.

Countries	*Typhoid cases*	*Paratyphoid cases*
Belgium	891	122
Czechoslovakia	6,749	87
Denmark	247	96
Esthonia	804	250
Finland	891	664
Latvia	997	10
Switzerland	328	87

In Germany, 14 States which made the distinction reported 1,245 paratyphoid and 2,462 typhoid fever cases.

Germany. — The proportion of reported cases of typhoid fever per 100,000 inhabitants during 1925 was 20.0 against 23.3 in 1924. In Prussia, the mortality rate was 25.5 against 28.7 in 1924, while in Bavaria the rates were 12.9 and 15.2 respectively. The improvement during 1925, as indicated, took place in all the States except four: Bavaria, Würtemberg, Lippe and Waldeck.

Czechoslovakia. — The proportion of reported cases per 100,000 inhabitants increased from 39.6 in 1923 and 48.8 in 1924 to 54.7 in 1925, this being due to epidemics in Slovakia and Sub-Carpathian Ruthenia.

Morbidity Rate per 100,000 Inhabitants.

	1923	*1924*	*1925*
Bohemia	30.5	29.9	29.7
Moravia and Silesia	42.7	55.6	54.7
Slovakia	54.9	78.5	67.1
Sub-Carpathian Ruthenia	45.7	68.3	97.6
Czechoslovakia	39.6	48.8	54.7

Poland. — The worst affected area of Poland was the West Central, where the case rate per 100,000 inhabitants was 65.31; the highest mortality has, however, been observed in the East Central area (8.75 per 100,000).

Geographical areas	*Morbidity rate per 100,000 inhabitants.*	*Mortality rate per 100,000 inhabitants.*
Eastern	47.02	2.30
East Central	44.33	8.75
West Central	65.31	7.58
Western	29.26	4.07

U.S.S.R. — The number of cases of typhoid fever in the whole of European territories in 1925 remained the same as in 1924 (127 per 100,000 inhabitants), but the Northern and Western districts, the Lower Volga and Viatka-Vietluga districts reported considerably more cases. In the remainder of the country there was a decrease of typhoid fever, which was most marked in the Central Industrial and in the Black Soil Country. A decrease in the number of reported cases took place in the *Ukraine:* 34,128 cases in 1925 against 37,330 in 1924 (from 134.0 to 146.6 per 100,000 inhabitants respectively). *White Russia* showed an increase.

Morbidity Rates in the European Territories of U.S.S.R. per 100,000.

Geographical Divisions	*1923*	*1924*	*1925*
North-Eastern	50.8	68.7	136.0
North-Western	51.6	99.7	151.5
Western	101.2	92.8	149.0
Central Industrial	94.8	188.2	163.6
Central Black Soil	148.1	193.1	141.3
Middle Volga	102.4	81.9	73.8
Lower Volga	72.0	108.0	71.3
Viatka-Vietluga	55.9	70.6	104.8
Ural	119.9	108.1	132.4
South-Eastern	100.1	77.8	83.0
White Russia	47.1	315.0	359.0
Ukraine	119.9	146.6	134.0

The months of greatest prevalence were August (13,452 cases), September (19,273 cases) and October (11,830 cases).

In the *Kingdom of the Serbs, Croats and Slovenes* the typhoid fever situation improved everywhere, except in the Serajevo and Cetinje districts.

Italy. — 23,720 cases were reported in 1925 as against 27,108 in 1924. All provinces, except Liguria, Venetia, Abruzze and Molise and Basilicata, showed a considerably lower incidence than in the previous year.

The case mortality of enteric fever varies considerably in the different parts of the world. It is probable that some of the high rates shown for certain countries in the table below may be due to incomplete case registration, but the disease is undoubtedly of a more severe type in some non-European countries than in Europe. The case mortality is exceptionally low in countries where the milder types of paratyphoid infections are prevalent:

Case Mortality Rates from Typhoid Fever in Various Countries, 1919–25.

Country	*1919*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Austria	13.6	11.4	9.4	10.4	7.5	6.1	6.39
Bulgaria	12.9	10.4	11.6	10.5	11.6	11.4	13.50
Czechoslovakia	13.0	12.8	10.4	9.8	7.6	7.3	7.9
Danzig	10.2	4.9	10.6	14.9	10.0	6.9	13.5
England and Wales	16.7	17.3	16.0	19.3	14.0	—	—
Greece	—	—	—	—	—	17.2	4.6
Hungary	—	—	8.9	12.1	13.7	13.0	11.3
Lithuania	—	4.75	4.07	2.9	4.3	4.6	4.1
Netherlands	12.3	13.9	14.1	11.7	12.6	13.6	11.8
Norway (cities)	3.6	5.6	3.8	7.2	7.6	4.4	3.0
Poland	9.2	9.2	7.9	7.4	9.1	8.1	7.8
Roumania	12.7	11.2	12.3	10.5	10.6	11.6	10.7
Saar Territory	—	—	10.1	12.4	7.9	7.2	6.5
Kingdom of the Serbs, Croats and Slovenes	—	11.5	13.3	12.9	13.9	11.2	11.8
Scotland	13.2	13.5	15.0	15.3	9.6	—	10.3[1]
Egypt	21.7	23.7	25.1	25.9	26.4	25.8	28.8
Palestine	—	—	8.1	13.7	9.0	10.6	9.7
Japan	18.2	18.1	20.3	20.3	20.8	20.8	18.8
Korea	—	18.9	18.3	19.2	18.1	16.3	17.7
New Zealand	7.1	10.3	5.3	12.4	10.5	10.1	8.0

[1] Data for 16 towns.

A considerable improvement in the case mortality seems to have taken place in several countries. For example, in Czechoslovakia about 13 per cent of the cases reported were fatal in 1919 and 1920, but the percentage is now below 8. Similarly, there has been a decrease in the case mortality rate in Austria from 13.6 in 1919 to slightly over 6 per cent during the last two years. Corresponding decreases are observed in various other countries. It is uncertain how far this decrease may be ascribed to the prevalence of milder types than formerly or to improved registration.

A considerable fluctuation of the case mortality from year to year is shown in several countries where the registration is good. This is probably caused by variations of the relative prevalence of paratyphoid infections.

The case mortality of enteric fever in Japan is from 18 to 20 and in Korea from 16 to 19. Although these figures are very much higher than those reported in Europe they are probably fairly correct. In New Zealand, on the other hand, the case mortality rate compares favourably with those recorded in Europe.

MALARIA *.

In 1925, the prevalence of malaria has declined in most European and Mediterranean countries.

The post-war epidemic wave seems to be on the wane.

* Data on the Balkan States and Spain have been compiled from the reports of the Malaria Commission (C.H. 273; C.H./Malaria/58) by Messrs. Ciuca, Markoff, Moutoussis, Pittaluga and Swellengrebel.

In Russia and in the Balkans the situation is still serious in spite of a slight diminution in the number of cases notified.

The following table shows the European countries in which malaria is endemic and for which data are available:

Country		*1919*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Bulgaria	Cases	—	—	—	—	77,862	62,074	97,547
Czechoslovakia	Cases	1,592	229	130	76	266	134	198
	Deaths	—	3	0	2	1	1	0
Italy	Cases	247,084	227,747	267,589	234,656	188,937	250,896	—
Poland	Cases	1,513	2,073	52,965	17,611	4,770	1,881	1,775
	Deaths	13	25	41	13	4	1	4
Kingdom of the Serbs,	Cases	—	—	28,750	14,600	21,414	48,962	—
Croats and Slovenes	Deaths	—	—	—	161	153	150	—
Spain	Deaths	1,937	2,044	1,912	1,518	1,290	1,195	925
U.S.S.R. (European territories, without Ukraine)	Cases	—	546,896	779,229	1,647,205	3,864,742	3,740,151	3,180,618
Ukraine	Cases	—	—	—	43,334	459,842	912,803	675,889

Malaria has, on the whole, been less prevalent in *Russia* during 1925 than it was during the two preceding years, the number of cases notified being 5,124,719 as against 5,983,477 during the previous year and 5,556,856 in 1923.

It must be borne in mind that the notification is far from complete. In the opinion of Dr. Dobreitzer, of the Commissariat for Public Health, only one-half of the cases are notified to the authorities. The figures given are, however, of sufficient accuracy to indicate whether an increase or decrease in the endemicity is taking place.

The diminution of the incidence has been greatest in the Ural division, where an epidemic occurred during 1924, and in the Central Industrial area and in the North, where the decrease has continued steadily since 1923. Lower returns were also shown for the Ukraine and the Middle Volga area. The most remarkable reduction of the malaria incidence has been effected among the personnel of railways and waterways, the number of cases reported among these during 1925 being not much more than one-third of that reported during 1923.

More cases were reported, on the other hand, during 1925 than during the two previous years in the Turkestan and Kirghiz Republics, in the Caucasus, Crimea and White Russia. It is uncertain whether this increase is in part or wholly due to an improvement of the notification.

Malaria Cases reported in U.S.S.R. by Geographical Divisions, 1923–25.

Geographical Divisions	*1923*	*1924*	*1925*	*1923*	*1924*	*1925*
	Cases reported			*Rate per 10,000 population*		
North-Eastern	38,932	11,468	6,535	172.84	48.81	27.81
North-Western	4,501	5,725	4,691	8.46	10.11	8.28
Western	21,381	18,787	20,654	29.04	25.32	27.84
White Russia	2,833	8,218	14,607	18.39	55.38	98.43
Central Industrial	334,815	195,710	123,277	186.19	102.90	64.81
Central Black Soil	273,680	349,905	321,189	261.70	325.05	299.32
Ukraine	459,842	912,803	675,889	174.98	358.50	265.45
Crimea	6,295	13,575	17,139	103.57	223.35	319.87
Middle Volga	1,183,871	8,551,516	701,565	1,230.50	912.54	751.84
Lower Volga	754,025	660,571	684,570	1,470.91	1,302.84	1,350.14
Viatka-Vietluga	66,292	57,508	27,014	199.80	169.24	79.50
Ural	375,854	714,232	348,203	468.02	906.08	441.86
North Caucasus	782,216	814,330	869,991	1,041.38	1,084.14	1,171.71
Transcaucasus	173,281	358,996	391,119	270.03	565.15	615.49
Kirghiz	171,032	202,167	224,008	382.15	471.46	522.39
Turkestan	80,563	68,744	133,637	113.83	98.17	190.96
Siberia and Far East	218,120	425,693	350,262	196.89	381.59	313.97
Railways and Waterways	609,323	313,529	210,279			
Total for U.S.S.R.	5,556,856	5,983,477	5,124,719	416.23	446.90	382.76

The seasonal curve of the malaria incidence showed, during 1925, two distinct maxima, namely, in June and in August, while during the two previous years the curve for the whole U.S.S.R. has only one maximum, which occurred in May or the beginning of June. In order to understand this change, it must be recalled that the maximum of the benign tertian malaria usually occurs in May and of the malignant tropical forms in the autumn. The latter have been most prevalent in Central Asia, Caucasus and the Volga area, while the former prevail in Central, Western and Northern Russia and the Ukraine. The decline of the malaria incidence in this part of the country and its increase in the South-Eastern area of the Union have brought the autumnal type more in evidence. The maximum occurred in May in the Ukraine also during 1925.

Percentage Distribution by Months of Malaria Cases reported in U.S.S.R. during 1925.

Months	*1923*	*1924*	*1925*
January	2.5	2.6	3.6
February	2.8	3.3	4.4
March	5.4	5.7	7.1
April	9.4	13.4	10.2
May	15.3	20.4	12.6
June	15.7	15.6	11.4
July	13.5	12.5	9.5
August	13.8	9.8	12.1
September	9.8	8.0	11.7
October	6.5	4.4	7.9
November	3.4	2.2	5.6
December	1.9	2.1	3.9
	100.0	100.0	100.0

Malaria has been in constant regression in *Poland* during the last four years: 1,775 cases were reported during 1925 as against 1,881 during 1924, 4,770, 17,611 and 52,965 respectively during 1923, 1922 and 1921.

In *Greece*, where war conditions and the influx of a million refugees from Asia Minor had considerably increased the prevalence of malaria in 1923, there has been a slight decrease in 1924:

	Percentage infected		
Greece	*1923*	*1924*	*Decline*
Native population	27.62	24.43	3.19
Refugees	44.42	39.63	4.79
Total population	36.02	32.03	3.99

The figures collected by Professor J. P. Cardamatis show that the morbidity is still very high and greatly in excess of pre-war rates, in two departments only is the incidence lower than 20 per cent, in only one under 10 per cent.

The higher morbidity rates are to be found in Messinia (56 per cent), Rodopi (51 per cent), Serrais (48 per cent), Chalcidice (48 per cent), Cavalla (45 per cent), Salonika (42 per cent), Zanthe (42.9 per cent). It is worthy of notice that in this department of Zanthe the morbidity rate had for the last 25 years remained between 7.60 per cent and 8.40 per cent.

Everywhere the prevalence of malaria has been markedly greater among the refugees than among the native population.

From medical evidence it appears that in many instances the refugees did not bring the infection with them but contracted the disease in their new environment, and therefore the high prevalence of the disease would be due to their lack of acquired immunity.

Plasmodium præcox is the most common (50–60 per cent) parasite: Pl. malariæ is comparatively rare (5 per cent).

In the *Kingdom of the Serbs, Croats and Slovenes, Dalmatia* is the province where malaria is most prevalent (and was so before the war), often with the severe tropical form as shown by identifications of the parasite in 13,470 cases:

	Per cent.
Plasmodium falciparum (œstivo-autumnal or tropical malaria) . .	56
Plasmodium vivax (tertian malaria)	39
Plasmodium malariæ (quartan malaria)	4
In *Bosnia*, a more benign type of the disease prevails:	
Plasmodium falciparum	16
Plasmodium vivax	78
Plasmodium malariæ	5
In *Macedonia* (Bitolj) the proportion is:	
Plasmodium falciparum	39
Plasmodium vivax	54
Plasmodium malariæ	7

The prevalence is extremely high, especially among the newly established inhabitants of the agricultural colonies.

In *Bulgaria*, though statistics of the morbidity of malaria are notoriously incomplete, Professor Ciuca has estimated the number of malaria infected individuals to be between 300,000 and 400,000. 97,547 cases were notified in 1925 as against 62,074 in 1924 and 77,862 in 1923.

The districts of Bourgas, Varna and Aitos are the most affected. In the 11 districts officially considered as infected, 14 per cent of the population were treated for malaria; in the same area, 37 per cent of the school-children had a characteristic spleen enlargement.

The maximum incidence is in August. The majority of cases are of the tertian benign type; the tropical form does not exceed one-third of the infections.

In *Roumania*, Professor Ciuca estimates the malarial population to 1,000,000; that is, one-seventeenth of the total population.

From the statistics compiled from various sources (mortality, morbidity and hospital returns), there has generally been a decline in the malaria incidence since 1892. There has been a flare up in 1919–1924.

The majority of cases are of the benign tertian type (87 per cent). The tropical form is comparatively rare (8 per cent), in spite of the fact that the maximum incidence in the Lower Danube is in August–September.

In *Spain*, there has been a further decline of the malaria mortality in 1925, the number of deaths being 925 (4.26 per 100,000) as compared with 1,195 in 1924, 1,290 in 1923, and 1,518 in 1922.

The most malarious provinces are: Caceres, Badajoz, Huelva, Alicante, Salamanca, Cadiz, Ciudad Real, Murcia, Cordoba.

It is interesting to note that most progress, in 1925, has been made in the most malarious districts (Alicante, 76 deaths instead of 111 in 1924; Badajoz, 104 – 136; Caceres, 129 – 172; Huelva, 40 – 73 ; Murcia, 42 –102.

In the provinces of Caceres and Toledo, the rate of infection was shown by blood examinations (60,000) to be 36 per cent; 20 per cent of the positive findings showed the Plasmodium falciparum.

In the *United States of America*, 98,195 cases were notified in 26 States as against 111,156 in the same, the main decline occurring in Mississipi; there has been an increase in South Carolina. The South-Eastern States remain by far the most heavily infected.

Cases of Malaria notified in Certain States of the United States of America, 1919–25.

States	*1919*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Alabama	2,517	756	793	1,445	6,849	4,280	3,207
Arkansas	5,015	8,022	6,360	4,111	5,980	4,039	3,944
Florida	1,895	1,862	994	971	1,050	933	676
Georgia	3,345	5,108	2,370	1,888	1,475	763	2,452
Louisiana	2,411	2,292	2,306	1,597	939	859	828
Mississipi	112,554	118,376	121,207	105,747	95,222	79,631	71,719
Tennessee	—	—	—	—	—	1,082	1,380
Texas	—	39,603	49,241	35,727	21,268	16,068	11,502
Virginia	4,440	4,575	3,806	3,689	3,006	2,268	1,515
South Carolina	—	—	—	—	—	—	11,118
Oklahoma	—	—	—	—	—	—	2,009

Malaria is endemic in practically all *tropical* and *sub-tropical countries*; but the cases or even deaths are usually not reported. The few figures which we possess are only indications and do not correspond to the actual prevalence.

INFLUENZA

Any serious attempt to enforce the notification of influenza is made only in the U.S.S.R., the Scandinavian countries and certain States of the United States. Information regarding the incidence of this disease must be gathered, therefore, largely from mortality statistics. These must, however, be used with caution, as no international agreement exists regarding the primary tabulation of multiple causes of death; consequently, the practice as to the tabulation of influenzal pneumonia as a cause of death varies greatly from country to country.

The table below refers to influenza cases or deaths in such countries where information is available for recent years:

INFLUENZA CASES OR DEATHS REPORTED IN VARIOUS COUNTRIES, 1920–25.

Countries reporting: *Cases*	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Sweden	65,194	20,569	92,671	18,032	30,519	13,466
Norwegian towns	15,980	7,131	59,472	23,784	10,435	8,550
Denmark	175,736	20,153	237,635	79,648	73,098	58,929
U.S.S.R.	—	—	—	1,111,016	1,854,391	2,606,494
United States (24 States)	—	36,707	268,991	332,949	72,666	177,799
Hawaii	—	786	788	2,455	471	333
Deaths						
105 English and Welsh towns	5,665	4,170	10,614	4,147	8,790	5,772
Irish Free State	—	—	1,812	621	2,073	1,148
Northern Ireland	560	316	889	415	1,026	587
Netherlands	2,470	462	3,692	787	590	641
46 German towns	—	3,572	6,985	3,532	3,052	2,531
26 Swiss towns	1,248	104	355	127	383	221
Spain	17,841	5,837	7,992	8,367	7,035	6,293
Canada	2,411	159	375	874	730	1,589
British Guiana	163	229	105	77	28	22
Uruguay	—	185	51	223	55	42
Mauritius	—	1,563	631	556	702	338
New Zealand	480	105	23	223	32	22

The most striking fact in the above table is the enormous number of cases reported in the *Soviet Union*. The reported case incidence (18.65 per 1,000 inhabitants) is, as a matter of fact, about equal to that of Denmark (17.3), where the conditions for notification are of the most favourable, which shows the serious effort made to render case reporting efficient. The lower number of cases reported in 1923 were simply due to that the notification of influenza has only recently become obligatory and was not as yet in force in the Ukraine. This high incidence does not appear to indicate any unusual prevalence of influenza, as the general death-rate in Moscow, Leningrad and Kharkof was quite favourable in 1925. The incidence is shown below for the various geographical districts:

INFLUENZA CASES REPORTED IN THE U.S.S.R. IN 1925.

Geographical Districts	*Cases*	*Rate per 1,000 population*	*Geographical Districts*	*Cases*	*Rate per 1,000 population*
North-Eastern	78,863	33.6	Lower Volga	94,543	18.6
North-Western	110,089	19.4	Viatka-Vietluga	74,572	21.9
Western and White Russia	177,030	19.9	Ural	262,714	33.3
Central Industrial	552,326	29.0	North Caucasus and Don	147,192	21.6
Central Black Soil	147,775	13.8	Transcaucasus	55,313	9.8
Ukraine	376,162	13.6	Siberia	235,638	21.1
Crimea	25,638	42.7	Central Asia	75,158	6.7
Middle Volga	179,940	19.3			

It is seen that the incidence was above the average in the Central Industrial, North-Eastern and Ural districts, where it was about thirty per 1,000 inhabitants. Influenza seems to be less prevalent in the Ukraine and in the adjoining black-soil districts of Russia, where it was about fourteen. The low rates shown for Transcaucasus and especially for Central Asia may be affected by the difficulties of obtaining complete reports for these areas. In all, the remainder of Russia and in Siberia the incidence is about twenty per 1,000 inhabitants.

In *Great Britain*, where influenza was fairly severe in 1924, a decrease was recorded in 1925. An epidemic of not very serious proportions reached its maximum towards the end of February. In *Ireland* only half as many deaths from influenza were reported as in 1924.

Influenza was on the whole less prevalent in continental Europe than in 1924; serious epidemics have not occurred since the beginning of 1922. There was a decrease in *Scandinavia*, *Germany*, *Switzerland* and *Spain*, but a slight increase in the *Netherlands*. It is seen from the table for large cities shown below that this decrease extended to *France*, *Austria*, *Hungary*, *Poland* and most of *Italy*. An increased incidence was reported only from Prague, Milan and Lyons. The table below is given with all reservations regarding the lack of comparability due in first line to different procedures in the classification of influenzal pneumonias. It seems beyond doubt, nevertheless, that influenza caused a higher mortality, in 1925 and the preceding year or two, in Western Europe than it did in Central and Eastern Europe.

Deaths from Influenza in Large Towns throughout the World, 1922–25.

Towns	*Population*	*1922*	*1923*	*1924*	*1925*	*Rate per 100,000 in 1925*
Europe:						
Triest	249,000	40	21	41	9	3.6
Vienna	1,870,000	282	80	81	67	3.6
Amsterdam	718,000	276	58	36	42	5.8
Paris	2,906,000	517	169	316	179	6.2
Budapest	952,000	136	54	114	60	6.3
Cracow	187,000	20	9	18	12	6.4
Rotterdam	552,000	168	59	29	37	6.7
Lodz	554,000	49	23	53	40	7.2
Stockholm	443,000	174	8	74	33	7.4
Copenhagen	587,000	198	72	102	46	7.8
The Hague	398,000	115	50	57	35	8.8
Barcelona	739,000	82	90	82	71	9.6
Brussels	808,000	—	—	87	80	9.9
Moscow	1,855,000	144	209	207	208	11.2
Genoa	335,000	55	78	46	39	11.6
Prague	713,000	58	48	41	95	13.3
Venice	201,000	45	41	21	28	13.9
Milan	857,000	200	42	72	127	14.8
Strasburg	167,000	80	15	46	27	16.2
Berlin	4,014,000	1,891	785	988	657	16.4
Cologne	727,000	293	180	157	134	18.4
Madrid	783,000	241	217	150	149	19.0
Belfast	438,000	241	100	139	84	19.2
Lille	201,000	90	23	37	39	19.4
Glasgow	1,057,000	797	64	420	206	19.5
Liverpool	852,000	330	114	189	180	21.1
London	4,577,000	2,600	764	1,680	1,055	23.1
Dublin	443,000	202	48	294	110	24.8
Rome	735,000	432	190	230	186	25.3
Breslau	550,000	230	201	167	167	30.4
Lyons	562,000	235	102	101	180	32.0
Valencia	260,000	71	107	85	96	36.9
Birmingham	947,000	444	259	373	365	38.5
Sevilla	211,000	126	114	93	94	44.5
Africa:						
Algiers	204,000	107	62	49	43	21.1

DEATHS FROM INFLUENZA IN LARGE TOWNS THROUGHOUT THE WORLD 1922-25 *(continued)*.

Towns	*Population*	*1922*	*1923*	*1924*	*1925*	*Rate per 100,000 in 1925*
North America:						
St. Louis	773,000	130	153	104	20	2.6
Mexico City	615,000	84	52	—	47	7.6
Chicago	2,702,000	318	475	196	270	10.0
Boston	748,000	61	76	25	81	10.8
New York	5,928,000	854	1,052	516	679	11.5
San Francisco	507,000	170	93	34	93	18.3
New Orleans	387,000	117	139	104	180	46.5
South America:						
Montevideo	423,000	3	107	46	41	9.7
Buenos Aires	1,843,000	176	268	280	261	14.2
Sao Paolo	790,000	122	242	196	235	29.7
Callao	60,000	7	43	21	33	55.0
Lima	190,000	53	125	57	182	95.8
Asuncion	56,000	45	113	31	77	137.5
Asia:						
Madras	527,000	24	—	14	30	5.7
Hong-Kong	625,000	422	83	52	42	6.7
Bombay	1,149,000	528	250	118	91	7.9
Rangoon	342,000	236	137	83	47	13.7
Manilla	308,000	—	—	115	67	21.8
Calcutta	908,000	927	688	377	573	63.1

In the *United States* and in *Canada*, where influenza had been little in evidence in 1924, there was a certain recrudescence in 1925, but the incidence was, however, considerably lower than in 1923. There were 2,791 deaths from influenza in *Mexico* in 1925 as against 1,053 in the previous year.

Information for *Africa* regarding influenza is fragmentary. It is, nevertheless, sufficient to show that the disease exists everywhere but that serious epidemics did not occur in 1925. In *Mauritius*, where severe outbreaks are of frequent occurrence, the number of deaths from influenza reported in 1925 was the lowest on record since the great pandemic. An outbreak causing 310 deaths occurred in March in *Nigeria*; the disease is prevalent and frequently of severe type in the French colonies north of the Guinea Coast. In 1925, 1,756 cases, of which 36 fatal, were treated in the hospitals of the *Belgian Congo*. 493 cases, of which 19 fatal, were treated in the hospitals of *Anglo-Egyptian Sudan*. 208 cases were reported in *Nyasaland* as against 753 in 1924 and 3,388 in 1923. The disease has been little in evidence in *Australia* and in *New Zealand*.

Influenza remains prevalent in *India*, where the great pandemic of 1918 caused a higher mortality than in any part of the world, but is now of secondary importance. An epidemic causing 4,675 deaths occurred in the *Philippine Islands*, reaching its maximum in August. 340 deaths were attributed to influenza in the *Federated Malay States* in 1925 as against 61 the previous year. In the *Straits Settlements* there were 148 deaths from influenza as against 164 in 1924. The disease appears to have been unimportant, as usual, in *China*; 46 deaths were reported in the International Settlement of Shanghai as against 44 the previous year.

ENCEPHALITIS LETHARGICA.

The incidence of encephalitis lethargica decreased in 1925 in most countries following the severe outbreaks which visited several parts of Europe in 1924. Noteworthy increases were reported only in *Denmark*, the *Netherlands*, *Belgium*, *Poland* and *Czechoslovakia* but in none of these countries was the incidence very high. An outbreak of epidemic hiccough occurred in Denmark, 795 cases being reported.

Cases of Encephalitis Lethargica reported in Various Countries, 1920-25.

Countries	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
England and Wales	890	1,470	454	1,025	5,039	2,637
Scotland	—	—	—	151	707	235
Northern Ireland	—	—	—	23	278	23
Sweden	352	1,512	192	530	318	186
Finland	—	1,095	46	83	43	31
Denmark	223	138	42	87	107	147
Belgium	—	243	26	27	22	54
Switzerland	984	156	62	203	87	71
Saar Territory	—	223	21	23	29	18
Italy	—	278	477	277	619	526
Malta	—	—	2	0	40	27
Czechoslovakia	—	—	150	366	97	189
Poland	—	85	121	329	89	157
U. S. S. R.	—	—	—	960	2,076	2,132
United States (31 States)	—	—	—	2,387	1,296	1,541
New Zealand	42	23	36	36	30	24

Encephalitis lethargica seems to be more prevalent in the *United Kingdom* than anywhere else. The incidence has remained at a nearly constant level since the last epidemic came to an end in July 1924, about fifty cases being reported every week. The case mortality is lower than in the earlier outbreaks, when it was about 50 per cent; in 1924 it was 36 per cent. The disease was of frequent occurrence in all parts of England, but prevailed especially in Lancashire and neighbouring counties.

In *Italy*, encephalitis cases were most numerous in Lombardy, Venice, Emilia, Tuscany and Latium and Sicily. Cases were reported from all parts of the *Soviet Union*; their incidence was highest in North Caucasus and the Ukraine.

The incidence of encephalitis lethargica remained fairly low in the *United States;* the highest number of cases was reported from the states of Massachusetts, New York, Illinois and California. A few cases were reported here and there in South America, Australia and New Zealand, but there was nowhere evidence of any serious prevalence.

ACUTE POLIOMYELITIS

The occurrence of acute poliomyelitis in 1925 was characterised by a severe outbreak in New Zealand, where the incidence reached one per 1,000 inhabitants, by outbreaks in certain parts of the United States and a fairly normal prevalence in European countries. Countries where a considerable number of cases have been reported in recent years are shown below:

Cases of Acute Poliomyelitis reported in Various Countries, 1920-25.

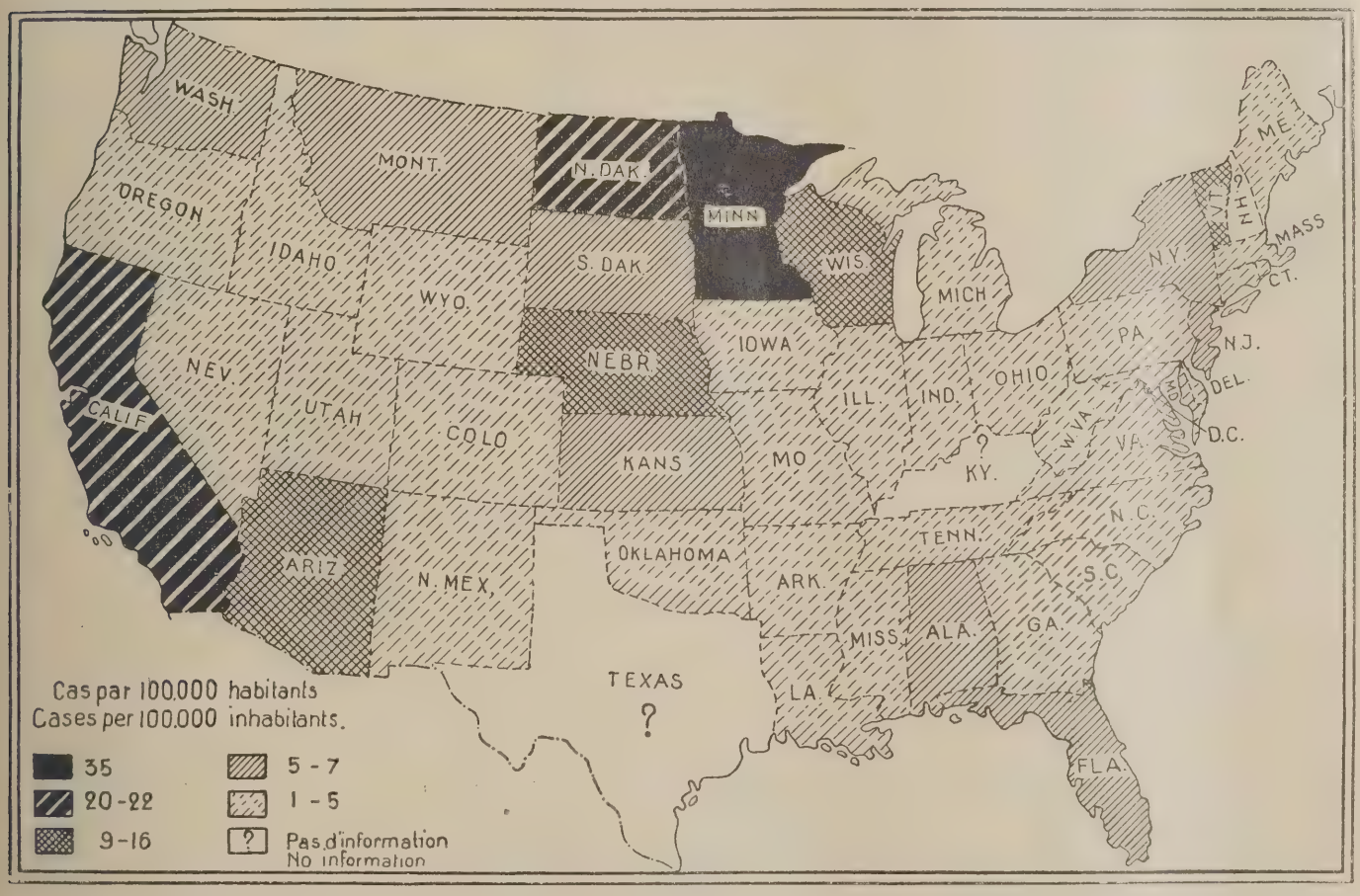
Countries	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
United States (38 States)	2,293	6,036	2,138	3,172	5,078	5,429
New Zealand	76	267	98	17	73	1,319
Australia	71	140	114	137	232	267
England and Wales	293	488	355	587	777	371
Norwegian towns	24	4	6	19	13	87
Sweden	181	141	112	309	656	505
Finland	19	15	31	47	45	28
Denmark	60	70	59	76	152	119
Switzerland	104	72	65	257	108	93
France	134	211	165	175	216	222
Italy	—	—	—	—	250	600
Germany	—	—	—	—	498	386

The *New Zealand* outbreak began in November 1924, at Wellington, and spread in January and February to the whole country. The districts of Southland and West Coast were only slightly affected. The maximum occurred in February and March, that is, in late summer, as in the northern hemisphere. The case mortality was 13 per cent; it was about 10 per cent in the districts of Canterbury and Taranaki-Horowhuena, where the disease was most prevalent (1.3 and 1.8 per 1,000 inhabitants respectively). The case mortality of poliomyelitis is frequently higher in severe epidemics; it was thus 27 per cent in the New York epidemic of 1916 and 37 per cent in the epidemic of 1924 in Iceland, in both of which the incidence was about 2 per 1,000 inhabitants.

Minor outbreaks were reported in *Australia* in 1924 and 1925. An outbreak in Queensland culminated in October 1924 and one in Victoria in May 1925.

Poliomyelitis outbreaks occurred in 1925 in many localities of the *United States*, the most important of which were in California (805 cases), Minnesota (929 cases), Wisconsin (313) and New York State (793). The maximum occurred in July and August in California, in August in Minnesota, in September in Wisconsin and in August and September in New York State. The southern States were but little affected by the outbreak. In *Canada* 167 cases were reported, of which 92 were in the province of Ontario and 37 in Saskatchewan.

Incidence of the Acute Poliomyelitis in the United States in 1925.



In Europe, poliomyelitis was as usual most prevalent in *Sweden*, where, however, fewer cases were reported than in 1924. In *England* there was a considerable diminution of the disease in comparison with the previous year; the cases occurred sporadically throughout the whole country.

CEREBRO-SPINAL MENINGITIS.

The notification of epidemic cerebro-spinal meningitis cases is obligatory in nearly all countries. Although there is probably not a country or colony in the world where cases do not occur, it is nevertheless a relatively infrequent disease, rarely causing epidemic outbreaks except where certain conditions favourable to its propagation exist, as has been the case in recent years in certain parts of tropical Africa. It is uncertain what proportion of the cases reported as epidemic meningitis in the various countries is really true meningococcal meningitis. The Health Section has endeavoured to elucidate this problem, and it has been found by bacteriological investigation that in Prussia, during the two years 1923 and 1924, about 70 per cent of the cases reported

as cerebro-spinal meningitis were due to the meningococcus; in Denmark, about 66 per cent of the reported cases were found to be meningococcal*. It is not unlikely that the proportion of erroneous diagnosis may be higher in many other countries, but it is also likely that in such countries more cases escape notification. In the table below are shown data for various countries where the records may be considered as fairly reliable or at least indicative of the prevalence of the disease.

CEREBRO-SPINAL MENINGITIS CASES REPORTED IN VARIOUS COUNTRIES, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Austria	34	21	38	38	39	38
Belgium	38	35	50	56	34	62
Czechoslovakia	75	80	190	142	145	154
Denmark	144	92	84	96	129	138
England and Wales	583	411	344	301	397	402
France	417	398	379	381	562	653
Germany	—	696	1,622	1,149	742	750
Hungary	—	35	49	29	23	41
Italy	110	86	66	368	409	472
Netherlands	133	120	132	111	106	115
Poland	596	477	533	597	414	[1]396
Scotland	86	121	116	114	118	157
Sweden	102	120	79	85	115	121
Switzerland	39	32	30	69	33	31
United States (40 States)	2,616	2,076	1,704	1,793	1,358	1,602
Algeria	25	31	61	61	38	51
Egypt	43	43	41	44	18	32
Nigeria (deaths)	—	—	—	154	244	1,322
Uganda	—	—	677	207	118	298
Union of South Africa	128	113	58 [2]	515 [3]	826 [3]	[3]552
Hong-Kong	158	125	53	107	81	77
Japan	951	772	935	708	1,348	447
Australia	100	80	69	61	71	91
New Zealand	79	56	42	36	31	31

[1] Excluding the department of Lodz.
[2] Six months ending June 30th.
[3] Fiscal years ending June 30th.

Although extensive epidemics of meningitis have not occurred in Europe in recent years, its incidence nevertheless fluctuates from time to time. This was recently the case in Central Europe, where it increased markedly in 1922 and 1923. The incidence has been substantially the same in 1925 as during the previous year, and there have been no important outbreaks. Neither has there been any unusual prevalence in the United States or elsewhere in America.

A remarkable decrease of cerebro-spinal meningitis has occurred in *Japan* since the severe epidemic of the disease resembling encephalitis, which culminated in September 1924, came to an end. The number of encephalitis cases reported in 1925 is the lowest on record and was only about half of the average for 1920-23. The case mortality was normal, about 60 per cent. More than half the cases (243 out of a total of 447) occurred in the three provinces of Tokio, Osaka and Sisuoka, none of which were seriously affected by the epidemic of 1924. Cases were exceedingly rare in the districts which suffered most from the epidemic: only 21 cases were reported in the island of Shikok and 20 cases in the five south-western provinces (Chugoku) of the main island. No case was reported in the province of Toyama, where the epidemic of the previous year originated. These provinces were responsible for 70 per cent of the cases reported during the said epidemic.

Serious outbreaks have occurred in recent years in certain parts of West Africa; 1,322 deaths were thus ascribed to epidemic meningitis in 1925 in *Nigeria*. Epidemic meningitis was imported in the *French Territory*

* See "Cerebro-spinal Meningitis in Prussia in 1923 and 1924", by Prof. E. Seligmann (Health Organisation, League of Nations), Geneva, 1926; also League of Nations *Monthly Epidemiological Reports*, 1925, pp. 541-543.

of the Niger in 1921; an epidemic followed, causing 3,200 deaths (77 per 1,000 inhabitants) in the district of Niamey in the course of six weeks. The case mortality was about 85 per cent. In 1923, there were renewed outbreaks in the territory, causing about 1,800 deaths. In 1924, an epidemic broke out in the district of Zinder (210,000 inhabitants), causing 5,216 deaths. About 1,400 deaths were reported in other districts of this colony and about 1,000 deaths in neighbouring districts of Northern Nigeria. The disease has been little in evidence in 1925 in these territories.

SCARLET FEVER.

The notification of scarlet fever and the other common epidemic diseases of childhood approaches probably nowhere any degree of accuracy owing to the relatively benign form in which they now generally prevail. Direct comparison between the reported incidence in the various countries is, therefore, not justified. The data suffice, however, to show the movement from year to year in each country and consequently in geographical groups of countries. Scarlet fever is most prevalent in the temperate climates and among the white race; it is rare and of no importance in the tropics and in most subtropical countries.

Scarlet Fever Cases reported in Certain African Countries, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Algeria	103	87	111	163	219	240
Egypt	135	166	134	107	164	117
Tunisia	—	—	—	37	66	278
Union of South Africa	1,732	920	640[1]	2,042[2]	1,024[2]	[2]879

[1] Six months ending June 30th.
[2] Fiscal year ending June 30th.

Scarlet fever is of little importance in Africa and no significant change of its incidence has taken place in 1925, except in the *Union of South Africa*, where it has diminished markedly during the last two years. Only 26 cases occurred among the natives, while there were 853 cases in the white population. The notification is probably less complete among the natives, but the disease is undoubtedly of less frequent occurrence among these than among the white population.

Scarlet Fever Cases reported in Certain Countries of America, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Canada	—	—	—	—	17,340	14,148
Of which: Ontario	5,130	4,564	3,950	5,011	7,332	5,371
United States (45 States)	157,547	184,264	152,235	166,418	175,482	172,590
Uruguay	105	36	75	108	789	354

The incidence of scarlet fever in the *United States* remained the same in 1925 as during the previous year; it has not decreased in recent years. The disease is least prevalent in the southern States, where there is a high proportion of coloured population. 691 deaths were attributed to scarlet fever in 1925 in *Mexico*. Scarlet fever is very little in evidence in the *West Indies* and in *South America*. In 1925, 195 cases were reported in *Cuba*, 5 in *Jamaica*, 3 in the *Panama Canal Zone* and only 17 in *Chile*. It is infrequent also in *Hawaii*, where there were 22 cases in 1925.

Scarlet Fever Cases reported in Certain Countries of Asia and in Australasia, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Japan	1,368	1,589	1,657	1,562	1,843	2,571
Korea	—	717	585	1,008	1,361	734
Palestine	—	115	83	13	7	50
Australia	5,180	6,104	5,779	6,634	7,345	5,310
New Zealand	1,248	1,845	1,449	1,201	1,176	1,028

There has been a marked increase of scarlet fever in *Japan* in recent years, although it is still relatively infrequent there in comparison with Europe or North America. The case mortality, which is very high, is apparently also increasing; it was 5.6 per cent in 1923, 6.6 per cent in 1924 and 10.8 per cent in 1925. The great majority of the cases occurred in the large towns and neighbouring districts, especially Tokio, Kyoto and Nagasaki, while the disease was nearly or entirely absent from provinces containing no large industrial or commercial centres. In *Korea*, there were 734 cases in 1925, as compared with 1,361 the previous year; 671 of these cases occurred among Japanese and only 84 among Koreans, thus indicating the infrequency of the disease among the latter, as, even if the reporting were more complete among the Japanese, the number of cases of other diseases is always higher for the Korean than for the Japanese population. In the *South Manchurian Railway Zone*, 557 cases were reported among the Japanese and 15 cases among the Chinese population.

The incidence of scarlet fever was unusually low in 1925 in *Australia* and in *New Zealand*. The case mortality is low; it was 0.6 per cent in New Zealand in 1925.

Scarlet Fever Cases reported in Certain European Countries, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Austria	4,635	4,210	2,658	3,154	3,826	5,785
Belgium	1,985	1,588	1,496	2,008	1,252	762
Bulgaria	4,398	6,062	7,196	15,585	7,466	3,447
Czechoslovakia	4,188	9,425	10,784	10,522	9,709	12,543
Danzig	234	214	133	262	520	426
Denmark	12,285	11,093	5,109	3,851	3,084	2,752
England and Wales	119,490	137,073	108,242	85,603	84,654	91,357
Esthonia	2,549	1,433	583	675	451	775
Finland	1,970	1,359	990	1,148	1,842	1,697
France	16,839	13,667	7,435	5,254	6,595	7,985
Germany	—	48,281	32,448	27,234	32,798	30,919
Hungary	—	21,664	13,243	6,386	5,727	8,743
Italy	10,209	11,079	11,965	13,418	16,000	15,317
Latvia	2,572	1,532	1,598	1,555	1,450	2,767
Lithuania	—	—	437	230	399	1,505
Netherlands	6,208	4,045	3,301	3,577	6,635	11,628
Poland	16,664	28,164	14,717	15,746	18,030	25,210
Roumania	15,562	43,670	29,027	23,706	19,029	12,562
Scotland (16 cities)	17,449	17,025	14,589	16,754	18,047	11,388
Kingdom of the Serbs, Croats and Slovenes	4,940	15,221	18,088	16,521	10,107	8,743
Spain (deaths)	1,235	847	638	459	296	180
Sweden	9,750	9,264	10,718	10,829	10,882	10,660
Switzerland	3,939	3,733	2,272	2,137	2,351	1,981
U. S. S. R.	—	107,272	80,133	108,239	199,811	261,863

The incidence of scarlet fever was higher in 1925 than in 1924 in Eastern and Central Europe, with the exception of Finland, Switzerland and Roumania, while fewer cases were reported in the Scandinavian countries, in Great Britain and in Western and Southern Europe.

Scarlet fever, which had been little in evidence in *U.S.S.R.* during the great typhus epidemics, increased much in 1924 and 1925. A severe type is said to have predominated. The incidence was higher in 1925 than in 1924 in the whole Soviet Union, excepting in the Volga area and the adjoining districts. The increase was most marked in north-western and western Russia, in the Ukraine, the Don district and North Caucasus. The disease remained, as usual, relatively rare in Transcaucasus and in Turkestan. In the city of Moscow, there were 1,213 deaths from scarlet fever in 1925, as against 1,508 in 1924 and 696 in 1923. In the city of Leningrad, 836 deaths from scarlet fever were reported in 1925, as against 548 in 1924 and 231 in 1923.

Scarlet Fever Cases reported in the U.S.S.R., 1924-25.

Geographical Areas	*Number of cases*		*Rate per 100,000 inhabitants*	
	1924	*1925*	*1924*	*1925*
North-Eastern	4,449	4,836	189	206
North-Western	11,623	21,346	205	377
Western and White Russia	10,982	25,747	123	289

Scarlet Fever Cases reported in the U. S. S. R., 1924-1925 *(continued)*.

Geographical Areas	*Number of cases*		*Rate per 100,000 inhabitants*	
	1924	*1925*	*1924*	*1925*
Central Industrial	52,269	57,911	275	305
Central Black Soil	16,777	12,705	168	118
Ukraine	37,883	58,731	149	231
Crimea	757	549	141	103
Middle Volga	14,084	11,122	151	119
Lower Volga	10,122	7,035	200	139
North Caucasus and Don	4,842	13,750	71	201
Transcaucasus	590	832	10	15
Viatka Vietluga	4,054	3,282	119	97
Ural	9,720	14,533	123	184
Siberia	10,568	15,074	95	135
Central Asia	1,511	2,339	13	21
Railways and Waterways	9,580	12,071	—	—
Totals	199,811	261,863	143	187

The incidence of scarlet fever increased also everywhere in *Poland* — most markedly, however, in the western provinces. The outbreak was, according to the statistics, far less severe than in Russia, the number of deaths attributed to scarlet fever being not much superior to that reported in the cities of Moscow and Leningrad combined.

In Germany, 64 cases of scarlet fever were reported per 100,000 inhabitants in 1925, which leaves no doubt that the disease, also there, was less prevalent than in Russia. It was most prevalent in Saxony and the adjoining districts of Prussia, at Berlin in East Prussia, and in Silesia. In Italy, the incidence was highest in Venetia, Latium and Campania. Scarlet fever appears to be little in evidence in Sardinia.

DIPHTHERIA.

Important epidemics of diphtheria have not occurred during the last three years. The incidence is low in comparison with the periods of general prevalence which recur from time to time and which were last observed in many parts of the world between 1919 and 1921. A definite downward trend of the disease has, however, not been in evidence in recent years, except possibly in the United States and in Australia.

Diphtheria Cases reported in Africa, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Algeria	192	726	370	439	575	372
Egypt	810	873	959	1,137	1,545	1,784
Tunisia	—	—	—	203	282	288
Union of South Africa	1,016	1,014	540 [1]	885 [2]	1,037 [2]	[2] 1,251

[1] Six months ending June 30th.
[2] Fiscal year ending June 30th.

Diphtheria, though more prevalent than scarlet fever, is of relatively little importance in Africa as in all other tropical and subtropical countries. The incidence of diphtheria has continuously increased in *Egypt* since 1920. The case mortality rate appears to be high. In the *Union of South Africa*, 1,099 cases occurred among the white population and 152 among the natives; the latter number is probably incomplete, but it seems certain, nevertheless, that the disease is of less frequent occurrence among the coloured population, a fact which has been observed also in the United States.

Diphtheria Cases reported in Various Countries of America, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Canada	—	—	—	—	9,068	7,327
Of which: Ontario	5,940	6,313	3,529	2,935	3,475	3,053
Hawaii	125	186	235	186	223	310
Panama Canal Zone	—	136	174	99	67	86
Porto Rico	149	99	116	262	472	361
United States (45 States)	147,632	204,235	163,414	139,472	115,128	91,726
Uruguay	1,280	1,137	627	339	400	266

The incidence of diphtheria has decreased steadily in the *United States* since 1921; the decrease has been very regular since 1922, about 24,000 cases being reported less each year compared with the preceding year. It is well known that preventive measures are being vigorously pursued, especially in the large eastern and central towns, but the short period during which this campaign has been waged on an appreciable scale does not allow of definite conclusions as to its ultimate effect. For the time being, diphtheria is still very prevalent in many States, especially in California, Oregon and Colorado in the Far West, in Minnesota in the centre, and in New York State, Pennsylvania and Connecticut in the East. A distinct improvement was, however, remarked also in these States.

Diphtheria Cases reported in Various Countries of Asia and Australasia, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Hong-Kong	76	85	71	91	90	85
Korea	264	238	265	420	523	513
Japan	15,173	14,522	13,737	12,776	13,109	13,850
Palestine	—	35	83	39	24	40
Australia	16,024	24,783	14,156	9,915	10,918	8,066
New Zealand	2,442	2,611	1,989	1,951	2,717	1,537

Diphtheria is, like scarlet fever, relatively unimportant in Asia. It appears to be five or six times more prevalent than scarlet fever in *Japan*, but is not of as frequent occurrence as in Europe. The incidence has fluctuated but little in recent years. The case mortality appears to be high. Diphtheria is more common in *Siberia*, where its reported incidence was about 37 per 100,000 inhabitants; there was no marked change from 1924 to 1925.

The incidence of diphtheria was lower in 1925 than during any previous year in *Australia* and *New Zealand*. The case mortality was, as usual, low, about 3 per cent, as compared with about 6 per cent of the reported cases in *England*.

Diphtheria Cases reported in Various European Countries, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Austria	5,288	3,921	2,807	2,806	3,291	3,709
Belgium	6,409	3,914	2,279	2,353	1,645	1,389
Bulgaria	1,347	1,054	795	1,094	1,505	1,557
Czechoslovakia	4,872	4,380	3,223	3,159	3,548	4,164
Danzig	322	284	155	135	167	104
Denmark	13,567	13,945	7,929	5,692	5,241	5,102
England and Wales	69,481	66,506	52,153	40,009	41,980	47,723
Esthonia	1,207	825	517	408	461	545
Finland	6,330	3,940	1,941	1,793	1,306	1,237
France	14,598	16,981	12,624	11,033	11,569	12,096
Germany	—	63,018	37,949	31,942	37,248	36,296
Hungary	—	3,781	2,656	2,635	2,814	3,469
Italy	12,619	12,081	11,347	11,183	15,041	13,845
Latvia	1,159	964	698	645	594	665
Netherlands	8,091	7,575	4,744	4,134	4,451	4,919
Norwegian cities	3,582	2,000	877	826	644	533
Poland	3,178	4,130	4,228	3,694	4,838	5,888
Roumania	2,238	3,050	1,519	1,445	1,289	1,460
Saar Territory	—	285	208	265	311	244
Scotland	10,766	10,112	7,372	7,106	6,827	4,673
Kingdom of the Serbs, Croats and Slovenes	1,912	2,667	1,935	1,963	1,635	1,560
Spain (deaths)	2,723	3,052	2,937	2,268	2,027	1,406
Sweden	26,448	15,133	6,610	4,840	4,240	3,822
Switzerland	8,456	7,702	4,415	3,297	2,656	2,619
U.S.S.R.	—	39,161	41,675	47,770	66,345	69,430

A somewhat higher prevalence of diphtheria was observed in 1925 as compared with the previous year in Eastern and Western Europe and in the Danubian countries; a lower incidence, on the contrary, in Scandinavia and in Southern Europe. The incidence remained unchanged in Central Europe. The fluctuations were nowhere very considerable.

Diphtheria was, as in 1924, less prevalent than scarlet fever in the *Soviet Union*. The reported incidence was from 70 to 75 per 100,000 inhabitants in the Ukraine, in North Caucasus and the Don District, and in the Crimea. It was lowest, from 10 to 20, in Northern Russia and Transcaucasia and from 44 to 55 in the remainder of Russia.

The incidence of diphtheria in *Germany* in 1925 was 58 per 100,000 inhabitants, as against 62 in 1924 and 52 in 1923. It did not vary greatly throughout the country, being somewhat higher in northern than in southern Germany and highest in the Rhineland and in Saxony. The mortality from diphtheria per 100,000 inhabitants in 334 German towns decreased from 7 in 1923 and 6 in 1924 to 4 in 1925.

In *Italy*, diphtheria was most prevalent in an area stretching from Venice to Rome, and least prevalent in Southern Italy and in the Islands.

MEASLES.

MEASLES CASES REPORTED IN CERTAIN COUNTRIES IN AFRICA, AMERICA AND ASIA, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Algeria	—	—	1,647	692	650	854
Egypt (deaths)	3,753	1,254	2,583	7,673	1,750	6,084
Nyasaland	14	11	—	62	1,421	2,292
Tunisia	—	—	—	442	221	162
Canada	—	—	—	—	39,984	23,435
Of which: Ontario	15,423	2,851	8,950	10,843	25,694	12,501
Cuba: Havana	885	147	11	92	421	3,063
Hawaii	631	358	1,388	1,145	182	599
Panama Canal Zone	—	228	79	353	449	288
United States (45 States)	468,048	267,428	261,441	729,336	493,766	223,120
Iraq	—	605	87	487	1,374	1,076
Palestine	—	13	117	6,936	5,997	—

Measles is much more widespread and more deadly than scarlet fever and diphtheria in Africa and in the Near East. In *Egypt*, where a severe epidemic occurred in 1923, measles began to spread with the approach of the hot season in 1925, and an epidemic comparable in severity to the former followed, reaching its maximum in July. It is noteworthy that in tropical and subtropical countries, measles is usually most active in the hottest season, while in the cool temperate climates epidemics generally culminate in winter. In the Governorates (Cairo, Alexandria and the Canal Zone), 1,155 deaths were reported, giving a death rate of 77 per 100,000 inhabitants. 1,332 deaths were reported in the provinces of Lower Egypt and 3,603 deaths in the provinces of Upper Egypt. The highest incidence was in the province of Girga, in Upper Egypt, where 1,540 deaths were reported (170 per 100,000 inhabitants).

The United States of America as well as Canada experienced a marked decrease of the incidence of measles in 1925 after the widespread epidemics which had prevailed during the two preceding years. This decrease is shown below for some of the States which were most seriously affected in 1924.

State	*1924*	*1925*	*State*	*1924*	*1925*
California	27,373	2,400	New Mexico	4,244	598
Colorado	9,482	276	South Dakota	6,604	90
Idaho	3,264	165	Vermont	3,595	630
Kansas	20,263	450	Washington	21,372	347
Mississippi	25,697	4,814	Wyoming	2,454	129

Measles is not a notifiable disease in the majority of European countries. Such information as can be obtained shows that serious epidemics occurred in 1925 in Eastern Europe and that the incidence was higher than the previous year also in *France*, *Italy* and *Spain*. A decrease, as compared with the previous year, was reported in the Scandinavian countries and in the Balkans. No information is available regarding Central Europe.

MEASLES CASES REPORTED IN EUROPEAN COUNTRIES, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Bulgaria	10,772	25,710	8,700	10,264	7,393	3,130
Denmark	27,758	5,181	9,596	32,166	33,856	12,801
England and Wales (deaths)	7,190	2,241	5,694	5,316	4,834	3,236
Esthonia	1,032	1,785	2,811	1,930	203	82
France	17,489	16,644	12,019	34,585	12,838	35,351
Hungary	—	51,172	7,465	16,413	24,906	34,775
Northern Ireland (deaths)	278	44	52	204	213	112
Italy	94,223	96,725	46,471	75,024	91,460	112,475
Latvia	1,036	3,062	715	315	1,592	3,560
Lithuania	—	—	—	374	2,389	1,644
Norwegian towns	5,936	6,641	3,957	2,150	6,212	3,724
Poland	10,831	23,143	23,830	22,159	10,154	50,928
Scotland (deaths)	816	269	2,695	1,118	1,592	[1] 10,385
Kingdom of the Serbs, Croats and Slovenes	17,331	25,265	5,084	13,087	24,655	15,568
Spain (deaths)	5,813	5,449	6,513	3,954	4,422	4,822
Switzerland	15,194	3,070	3,930	10,316	3,242	5,791
U. S. S. R.	—	—	—	124,778	328,691	631,844

[1] Cases.

In the *Soviet Union* nearly twice as many cases have been reported during 1925 as in 1924. The incidence appears to have remained unchanged in the north-western (Baltic) provinces and in the central industrial district. This is confirmed by the mortality statistics for Moscow and Leningrad; in the former city there were 430 deaths from measles in 1923, 1,061 in 1924 and 756 in 1925; in the latter, 240 deaths were attributed to measles in 1923, 765 in 1924 and 663 in 1925. The number of reported cases increased considerably in all other districts. The incidence is remarkably uniform throughout the Union, leaving out of consideration Central Asia and Transcaucasus, where the reporting may be less complete. It was highest in northern and western Russia, in the Ukraine and in North Caucasus, lowest in the district of the Middle Volga.

MEASLES CASES REPORTED IN THE U.S.S.R. PER 100,000 INHABITANTS IN 1925.

Geographical Areas	*Rate*	*Geographical Areas*	*Rate*
North-eastern	586	Middle Volga	278
North-western	601	Lower Volga	453
Western and White Russia	633	Viatka Vietluga	424
Central Industrial	476	Ural	476
Central Black Soil	405	Siberia	390
Ukraine	544	Central Asia	106
North Caucasus, Don and Crimea	605	Transcaucasus	175
		Total	452

In *Italy*, there were about 21,000 cases more in 1925 than in 1924. The epidemic reached its maximum at the end of May. The incidence was lower than in 1924 in the whole of Northern Italy as far south as and including Emilia, while the increase was very considerable in Tuscany, Latium, Campania and Apulia.

Whooping-Cough.

Morbidity statistics of whooping-cough are too scanty to allow of any definite conclusions regarding its incidence.

Whooping-cough is notifiable in only two African countries — Nyassaland and Southern Rhodesia, and the data are of interest merely in proving that it exists also there.

About the same number of cases was reported in 1925 as in 1924 in the *United States*. Reports for 42 States give 105,690 cases in 1922, 159,294 in 1923, 142,264 in 1924 and 139,267 in 1925. The highest number of cases was reported in California, Illinois, Pennsylvania and New York. A considerable decrease took place in Virginia, North Carolina and Mississippi, where the disease was epidemic the previous year.

Such data as are available for European countries are given below; they are nearly all very incomplete. No changes exceeding the usual periodical fluctuations are observed. The disease appears to have been more prevalent in 1925 than in 1924 in Northern and Eastern Europe.

WHOOPING-COUGH CASES REPORTED IN CERTAIN EUROPEAN COUNTRIES, 1920-25.

Country	*1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Bulgaria	4,696	4,979	2,277	3,636	7,765	7,717
Denmark	—	5,037	22,060	26,446	8,443	20,528
England and Wales (deaths)	4,401	4,576	6,370	4,162	3,983	—
Esthonia	232	215	1,417	928	60	224
Hungary	—	2,656	2,669	2,736	5,718	5,273
Northern Ireland (deaths)	185	366	194	305	276	311
Latvia	604	449	510	479	495	919
Norwegian towns	6,116	2,624	6,607	4,580	2,487	4,468
Poland	3,674	4,356	8,219	4,367	4,681	10,435
Roumania	21,842	6,527	9,615	18,872	12,709	17,599
Scotland (16 towns)	—	—	—	—	13,930	16,520
Spain (deaths)	3,502	1,578	1,238	2,019	2,179	1,762
Kingdom of the Serbs, Croats and Slovenes	—	—	—	3,962	4,664	5,413
Switzerland	2,514	1,675	3,439	1,571	1,536	2,999
Ukraine	—	—	—	—	33,014	65,370

LEPROSY

In addition to the current information regarding leprosy received from the countries in which this disease is notifiable, supplementary data have been obtained from the annual reports of health administrations which were not available when the *Epidemiological Intelligence* for 1924 was published.

Africa

The number of new cases reported in 1925 was as follows:

Algeria	2	Guinea	8	Southern Rhodesia	15
Cameroons	704	Madagascar	207	Senegal	2
Dahomey (up to August)	6	Mauritania	2	Togoland	369
		Reunion	3	Tunisia	3

Algeria. — The number of new cases reported from 1919 to 1925 was 17 (2 new cases in 1925).

Gold Coast. — During the fiscal year ended March 30th, 1925, 96 cases of leprosy were treated, as against 146 for the last year. The greatest number occurred in the District of Yendi (75 cases out of 96). No accurate data can be given regarding the incidence of leprosy; it is certain, however, that the disease is widespread. Legislation regarding the treatment and control of lepers and the foundation of a large leper settlement is in preparation. Of the 96 cases treated in 1925, 65 were of the nodular and 31 of the anæsthetic type.

Nigeria. — A small leprosy asylum containing 16 - 20 inmates has been created.

Tanganyika. — The latest information available regarding leprosy refers to 1923.

Number of Lepers' Camps in each District, Lepers segregated and Estimated Number of Lepers not segregated.

Area	*Districts*	*Camps*	*Segregated lepers*	*Estimated lepers not segregated*
Northern	5	9	117	2,000
Central	4	9	816	3,930
Southern	3	5	877	26
Western	3	4	846	1,123
Coastal	8	15	583	1,102
Totals . . .	23	42	3,299	8,181

The above data result from a special enquiry undertaken during 1923 among the administration officers in charge of the various districts. Segregation is practically voluntary; a certain control for each camp is maintained, but an uncrippled leper would have no difficulty in escaping.

Kenya. — The report for 1923 gives the number of lepers segregated between 1917 and 1923.

1917	*1918*	*1919*	*1920*	*1921*	*1922*	*1923*
25	19	18	25	42	81	236

No accurate information regarding the prevalence of leprosy is available. The lepers are living in the settlements, of which the largest is at Kakamega, others being in Chuka, Kisii, Lama and Malinki.

Uganda. — In 1924, 551 cases were treated in the leper camps (285 nodular, 202 anæsthetic and 4 not specified). In addition to the two existing lepers' camps, a new camp has been built at Aduku in Lango.

Ruanda-Urundi. — 124 cases of leprosy were reported in 1924, as against 20 in 1923. This increase is not due to a recrudescence of the disease but must be attributed exclusively to a carefully executed census, as well as to the fact that the natives now more frequently come to the hospitals and clinics for treatment. Leprosy is, in fact, more widespread than the above figures show, for the natives rarely apply for treatment in simple cases of torpid or atrophic leprosy.

Zanzibar. — 41 new cases of leprosy were discovered (21 in Zanzibar Island and 20 in Pemba), as against 31 in 1923. The majority of the cases were from Mwera, in the centre of the island. It is estimated that, in addition to the 171 lepers now under segregation in the different settlements, there are about 150 at liberty throughout the island.

Mauritius. — The number of inmates in the leper asylum at St. Lazare on January 1st, 1924, was 38 (22 males and 16 females); these were transferred in February to a new asylum at Pamplemousses, which, with its modern accommodation, nursing facilities and management, constitutes an important improvement of the conditions existing at St Lazare. In the draft Public Health Ordinance, leprosy is made a notifiable disease, and power is given to the Director of Health Departments to promulgate regulations providing for the restriction of lepers in regard to various trades and occupations.

Union of South Africa — 58 new cases were reported during the year ending June 30th, 1925, viz.: 15 in Cape Province, 4 in Transkei, 8 in Natal, 2 in Orange Free State, 29 in Transvaal. Six were of European extraction, the remainder natives.

On June 30th, 1925, 2,174 lepers were segregated in the following institutions:

Institutions	*Males*	*Females*	*Total*
Robben Island	92	55	147
Pretoria	542	352	894
Amaticula	210	151	361
Emjanyana	278	217	495
Mkambati	115	90	205
Bochem	44	28	72
Total . . .	1,281	893	2,174

As to race, 129 were white (80 males and 49 females), 1,929 natives (1,134 males and 795 females), 111 coloured (63 males and 48 females), and 5 Asiatics (4 males and 1 female).

Among the 2,174 segregated, 233 died (157 males, 76 females) presenting a mortality of 10.7 per cent (12.2 per cent for males and 10.4 per cent for females); during the stated period, 529 were admitted to the institutions (360 males and 169 females).

Anglo-Egyptian Sudan. — Information regarding leprosy is not complete, especially for the southern provinces, where the tribes are not under close administrative control. In 15 provinces, 1,937 lepers were known in 1924, and, in addition to this number, 21 were in the leper hospital at Omdurman, and 13 in the leper hospital at Gedaref. Leprosy appears to be more prevalent in the southern districts than in Northern and Central Sudan. During 1925, 26 new cases, with 2 deaths, were reported, 8 in the northern and 18 in the southern districts.

Cameroons. — The last official report (1924) states that it is difficult to determine to what extent leprosy is prevalent: 34 new cases were treated at Mamfe, 17 at Bamenda and 10 at Victoria. There is reason to believe that fear of segregation prevents disclosure of the disease.

Sierra Leone. — The annual report for 1923 mentions 7 cases of leprosy as having been treated in the hospital for infectious diseases.

Asia.

Ceylon. — Two asylums for the segregation of lepers are maintained in the island. At *Hendala*, the number of remaining lepers at the close of 1923 was 516; during 1924 there were 135 admissions; 77 cases were discharged and 51 died, leaving 525 in the asylum on December 31st, 1924. In the other asylum at Mantinu Island, where 114 remained at the end of 1923, 48 lepers were admitted, 31 were discharged and 12 died during 1924; 119 remained on December 31st, 1924. The percentage of deaths to the total number of inmates was 9.9 in 1923 and 7.8 in 1924.

Cyprus. — 85 lepers remained at the end of 1924 — 72 Christians and 13 Moslems. The number of children in the home for healthy children of lepers was 11 at the close of the year, all of whom remained free from any sign of the disease.

Straits Settlements. — The number of lepers treated in the leper asylums during 1924 was 891, of whom 150 died.

	1921	*1922*	*1923*	*1924*
Cases	810	868	888	891
Deaths	231	207	164	150

The present accommodation provides for 456 in the old asylum, for 8 in the Eurasian Camp and for 320 in the new extension. Further prospective accommodation in 60 huts will be ready in one year.

The number of cases and deaths in the different asylums in 1924 was as follows:

Leper asylum, Singapore.	97 cases	19 deaths
Leper asylum, Pulan Jerejak. . .	584 »	130 »
Female leper wards, Jelutong. . .	42 »	1 »

Statistics of seven years' treatment of leprosy by modern methods (1918-24) show that, among 4,425 lepers present, 1,504 accepted treatment; of these, 5 were apparently and 96 markedly improved.

Out of 528 who accepted treatment during 1924, 423 appeared to be incurable. As to the nationality of the inmates, 605 were Chinese, 96 Indians (Tamil), 2 Philippinoes, 5 Islam Tamil and 4 Malays.

Federated Malay States. — 534 lepers were treated during 1924 in the leper asylum at Kuala Lumpur, where 37 deaths occurred, as against 443 cases treated in 1923 with 41 deaths. In the Pulan Pangkor Laut (for Malays only) there were 62 cases with 3 deaths, while in the Taiping leper wards, 207 cases were treated (11 deaths). Out of these 207 cases, 106 were sent to Pulan Jerejak and Pulan Pangkor Laut.

Kelantan (Unfederated Malay States). — There were 8 lepers in the leper camps at Kota Bharu at the end of 1924.

Indo-China. — 82 new cases were reported in this colony in 1925. According to a special report by Dr. Abbatucci, 14 leprosaria or villages for lepers exist in Indo-China, with 5,899 lepers, of which 7 are in Tonking, 1 in Annam, 1 at Culao Rong and 1 at Troing, in Cambodia.

French Possessions in India. — There is a leprosarium at Pondicherry. Eight new cases were reported in 1925.

Transcaucasia. — Five new cases were reported during the first ten months of 1925; no other information is available regarding the number of existing lepers in the country.

Iraq. — Leprosy is widespread throughout Iraq, but the incidence does not appear to be high. Seventy-nine cases were reported in 1925, as against 22 in 1924, and it is estimated that the total of cases in Iraq does not exceed 300. Mainly those cases are reported which present themselves at the civil hospitals of Baghdad and Basrah for treatment, and the majority of the notified cases are men.

Of 45 cases of leprosy treated at the Isolation Hospital at Baghdad in 1923-24, 23 were Arabs, 11 were Kurds and 12 were Persians. The establishment of a leper colony has been considered by the Government, but the compulsory segregation of individuals of different tribes and races and religions presents almost insuperable difficulties.

Japan. — The enumeration of lepers in Japan made on November 16th, 1925, showed 15,606 lepers, as against 16,261 in 1919. The majority of the lepers are not segregated. The provincial hospitals have accommodation for 2,080 lepers, and there are, in addition, six private leprosaria.

Australasia

Queensland. — There were 72 lepers on June 30th, 1924, at Peel Island; 16 lepers were admitted and 8 were discharged or died during the fiscal year ending June 30th, 1925; 44 were white and 28 of other races.

New Zealand. — Arrangements have been made for the closing of the leper station at Quail Island and the transfer of the lepers to Makogai in the Fiji Islands.

Mandated Territory of Samoa. — During the year ending March 31st, 1925, 7 lepers were transferred from Samoa to the leper asylum on the island Makogai (Fiji). Leprosy was introduced to Samoa in 1892 from Hawaii. Only 46 cases have been recorded since then, of whom 23 were Samoans. The administration is at present supporting 16 lepers at Makogai. New cases are sent to Fiji once a year.

Europe

The number of cases reported in various European countries during the last three years is shown below. These data are obviously incomplete, as leprosy is known to occur in several other countries.

Countries	*1923*	*1924*	*1925*
Esthonia	34	13	36
France	1	6	—
Greece	—	21	21
Latvia	37	16	13
European Russia	—	—	24
Kingdom of the Serbs, Croats and Slovenes	—	—	9

U. S. S. R. — It is now provided by law that lepers shall be isolated. The total number of beds in the leprosaria was 300 during 1923, 405 in 1924 and 520 in 1925. On December 31st, 1925, there were 10 leprosaria in the Union, with accommodation for 625 persons (425 in the European territories, 75 in Yakut district, 60 in the Far East and 25 in Uzbekistan); a leprosarium for 25 inmates is being organised in the City of Irkutsk (Siberia). The organisation of a leper colony in Transcaucasus is further under consideration.

The number of officially registered lepers on March 1st, 1926, was 671, about 500 of whom were isolated. There are about 70 localities in the Union where leprosy occurs. The highest number of cases was found in the Kuban district (130), Astrakan (126), government of Leningrad (34), Terek (43), Don District (26), Uzbekistan (22), Primorsk (21), and Azerbaijan (24). Isolated cases of leprosy were reported in the governments of Moscow (8), Smolensk (6), Pskow (12), Orel (3), and Voronej (4).

It is believed that there is a considerable number of lepers in certain localities; there should thus be about 200 in Armenia, about 150 in Azerbaijan and at least 500 in the government of Astrakhan. In North Caucasus 277 lepers were officially registered on January 1st, 1926, 70 of them being still at liberty. Leprosy is also prevalent in the districts around Lake Baikal, in the Yakut district, in the Far East and in the Mongol Buriat Republic.

America.

Reports regarding the number of new cases of leprosy were received from the following countries:

Countries	*1923*	*1924*	*1925*
Dominican Republic	10	10	3
Guadeloupe	—	—	5
Haiti.	—	—	3
Jamaica	2	7	9
Panama Canal Zone	9	21	15
Uruguay	3	7	12
United States	54	62	62

In certain other countries the number of deaths of lepers were reported:

Countries	*1923*	*1924*	*1925*
Argentine Republic	28	26	32
Brazil:			
Fed. Dist. of Rio de Janeiro	42	47	56 *
State of Sao Paulo . . .	37	42	58 *
Mexico	43	78	258
Uruguay	6	1	2

* Ten months only.

Canada. — Ten lepers were under treatment during 1925 at Tracadie, New Brunswick; 9 lepers were segregated at the leper station on Benteck Island (British Columbia).

Brazil. — During the four years 1921-24, 1,751 cases of leprosy were reported in the Federal District of Rio de Janeiro; 1,050 of these were confirmed, of which 675 were males and 375 females. 842 were Brazilians, and 208 foreigners; 60 were under 12 years of age. 154 lepers were isolated in the Hospital of San Sebastiao, 92 in the hospital " des Lazares ", the remainder being under supervision.

British Guiana. — There were 80 admissions to the leper asylum in 1924, as against 75 in 1923; 55 were discharged and 43 died (11.6 per cent), leaving 288 inmates on January 1st, 1925.

An official special report on leprosy in this colony states that, in spite of the system of segregation, there has been no real decrease in the incidence of leprosy during the last twenty years.

Number of Lepers in British Guiana, 1905-24.

1905	428	1912	406	1919	311
1906	383	1913	410	1920	271
1907	423	1914	366	1921	307
1908	450	1915	349	1922	333
1909	437	1916	324	1923	344
1910	450	1917	319	1924	329
1911	465	1918	309		

The Conference on Leprosy held at Georgetown during September 1924 - May 1925 drew up a new Lepers' Ordinance which should "ensure the early notification by making leprosy a compulsory notifiable disease and provide improved conditions of diagnosis and treatment at the leper asylum. It was further proposed to adopt stricter conditions for private isolation and more efficient supervision of lepers so isolated".

British Honduras. — The health report for 1924 states that leprosy is very rare in the colony, only two cases having been known during the year. The leper asylum was closed in May 1924.

Bahamas. — Eight cases were treated in the leper department of the Bahamas General Hospital in 1924, as in the previous year.

Dominica. — The number of known cases was 17 in 1925 in a population of 39,000. Three new cases were reported.

St. Kitts and Nevis. — There were 77 inmates in the leper asylum on January 1st, 1924; 2 were admitted and 3 died during the year.

Grenada. — Only 12 cases could be traced in 1924, as against 19 in 1923. Segregation of the lepers in their homes is attempted by means of Government subsidies, but it is stated to be unsatisfactory.

St. Lucia. — There were 10 new cases of leprosy in 1924, as against 16 in 1923. The returns represent, however, only the number of cases reporting to the Medical Officer for treatment. Twenty-five lepers were under treatment in 1923.

Jamaica. — Seven cases of leprosy were reported in 1924. There were 98 lepers in the lepers' home in Spanish Town in March 1925; 9 died during 1924 (7.4 per cent).

Trinidad. — The number of lepers at the leper asylum was 300 (139 males and 161 females) on December 31st, 1923; 49 died (10.5 per cent) and 109 were admitted during 1924. At the leper settlement of Chacachacase there were 157 lepers at the end of 1923; 24 new cases were admitted and 10 died in 1924.

Hawaii. — The number of new cases of leprosy reported during the fiscal year ending June 30th, 1925, was 74, distributed as follows: 46 in Oahu, 12 in Maui, 9 in Hawaii and 7 in Kauai. The number of deaths was 52 (1.6 per 10,000 inhabitants).

At the leper settlement at Molokai, the number of patients remaining on June 30th, 1925, was 506 (335 males and 171 females), of whom 267 were Hawaiians, 103 part-Hawaiians, 35 Portuguese and 27 Filipinos. At the settlement of Kokuas there were 32 lepers (23 males, 9 females). The Kaliki Hospital at Honolulu accommodated 130 patients (76 males and 54 females), of whom 47 were Hawaiians, 35 part-Hawaiians and 22 Japanese.

TRACHOMA

Notification of trachoma is most complete in countries where the disease is not a serious public health problem, while little statistical information is available for countries known to be seriously afflicted with this disease. The following data, which have been extracted from the current reports received by the Health Section and from annual reports of the various health services, give, therefore, an inadequate idea of the incidence of this disease.

Cases of Trachoma reported in Various Countries, 1920-25.

	1920	*1921*	*1922*	*1923*	*1924*	*1925*
Austria	167	219	320	379	341	818
Czechoslovakia	3,308	3,252	2,739	3,338	2,782	3,235
Danzig	43	38	11	15	54	49
Esthonia	186	492	467	513	528	471
Germany	—	1,887	1,522	1,192	1,784	2,777
Lithuania	—	—	—	1,764	2,375	2,118
Maltese Islands	—	—	833	1,282	488	542
Poland	1,556	2,425	2,737	4,061	2,954	4,751
Switzerland	—	3	5	8	13	16
U. S. S. R. (without Ukraine and White Russia)	—	—	—	207,589	362,890	560,105
White Russia	—	—	—	13,184	22,720	35,968
Ukraine	—	—	—	—	49,592	70,216
Waterways and Railways	—	—	—	—	648	3,436
Tunisia	—	—	—	14	102	25
United States	—	—	—	—	3,260[1]	[2]1,951
New Zealand	10	12	7	8	20	29
Cyprus	334	185	227	300	393	—
U. S. S. R. (Asiatic territories)	—	—	—	25,938	55,629	65,910
Central Asia	—	—	—	18,502	18,693	33,674
Transcaucasus	—	—	—	—	30,660	45,982
Turkey	—	—	—	—	—	210

[1] 30 States.
[2] 26 States.

America

In *Canada*, during the fiscal year ending March 31st, 1925, 15 immigrants were found infected with trachoma and barred from Canada; for the fiscal year ending March 31st, 1924, the number was 17, while in the fiscal year ending March 31st, 1923, 11 cases of mild trachoma were admitted into the country. It is said that trachoma is widely prevalent among the Indian population, and the Dominion authorities are studying the problem.

Cases of Trachoma notified in Certain States of the United States.

State	*1924*	*1925*	*State*	*1924*	*1925*
Alabama	—	99	Mississippi	173	235
Arizona	407	93	Missouri	689	446
Arkansas	54	84	New York	95	51
California	1,065	216	New Jersey	—	22
Illinois	66	50	Ohio	161	79
Kansas	73	9	Tennessee	139	—
Louisiana	50	21	Oklahoma	41	330
Massachusetts	61	76	Texas	—	88
Minnesota	48	17	Vermont	—	1

These data concern new cases of trachoma and represent only a small proportion of the existing cases.

At the beginning of 1925, four trachoma hospitals were in operation in the following localities: Knoxville (Tennessee), Pikeville (Kentucky), Russellville (Arkansas), Rolla (Montana). A fifth hospital was being opened in Minnesota. During the year, 790 cases were admitted to these hospitals. In the dispensaries of these hospitals 4,217 old trachoma cases and 699 new cases were treated.

During the year, 545,472 alien passengers were inspected and 564 found to suffer from trachoma. 854,915 alien seamen examined at different ports and places in the United States and in Canada revealed 106 cases of trachoma.

Europe.

Austria. — From 1919 to 1925 the number of cases of trachoma notified, although low, showed a tendency to increase.

In 1924, a survey revealed the fact that 15 to 25 per cent of the school-children (616 of 2,557 examined) in certain districts of Burgenland were suffering from trachoma. This proportion was reduced by energetic anti-trachoma measures to 7.8 per cent (218 trachomatous) in 1925. During the active campaign, 61 new cases were discovered.

Cases of Trachoma reported in Czechoslovakia by Provinces, 1921-25.

Province	*1921*	*1922*	*1923*	*1924*	*1925*
Bohemia	865	648	563	576	685
Moravia	1,095	911	808	843	985
Silesia	75	64	86	73	69
Slovakia	1,012	939	1,835	1,225	1,420
Sub-Carpathian Ruthenia	62	75	45	65	76
Whole country	3,110	2,637	3,337	2,782	3,235

In Czechoslovakia, trachoma assumes the character of a serious problem only in Slovakia, where the number of trachoma cases has been estimated, on the basis of surveys undertaken in certain representative parts, to be 60,000 among 3,870,000 inhabitants.

In *Esthonia*, trachoma is most prevalent in the eastern frontier districts. 329 of the cases reported in 1924 were among women, 199 among men.

Finland. — The percentage of trachomatous patients in the ophthalmic hospital at Helsingfors diminished from 13 per cent in 1873 to 4 per cent in 1925. In 1908, 5,273 persons were found to be suffering from trachoma, while this number was reduced to 2,613 in 1924. More women than men were found to be affected.

Germany. — Trachoma is a notifiable disease in all the German States except Saxony. The disease is most prevalent in East Prussia (Königsberg, Allenstein and Gumbinnen), where the proportion of children suffering from trachoma was high (13.5 per cent in 1889, 3.6 per cent in 1905). In Prussia, 11,567 cases were reported in 1912 and 12,220 in 1913, while, after the war, the number decreased to 1,095 in 1923 and increased again to 2,201 in 1925.

The official Prussian report states that the decrease was really less, due to insufficient examination of the school-children since the war. 352 were reported in Bavaria in 1925, 67 in Baden, 49 in Mecklenburg-Schwerin and 39 in Brunswick.

Greece. — The parts of Greece most affected by trachoma were the islands of Chios, Mytilene and Crete and the district of Laurion. During 1924, 3,000 trachoma patients were treated in Chios and 2,000 at Mytilene.

Poland. — The exact number of trachoma cases in Poland is not known, but it is stated that the disease constitutes a serious public health problem. The eastern and south-eastern provinces which present poor social and sanitary conditions are most affected, but the disease is common also in the west. The Public Health Service is investigating the trachoma problem in public schools, asylums and orphanages, but complete data are so far not available. It may be mentioned, in order to illustrate the seriousness of the trachoma problem in some of the schools, that in Pomerania, out of 1,477 children examined, 485 — that is: 33 per cent — were found to be suffering from trachoma.

Cases of Trachoma reported in Poland, 1922-25.

Geographical Districts	*1922*	*1923*	*1924*	*1925*
Eastern	730	557	578	1,013
East-Central	339	443	459	1,240
West-Central	1,188	2,523	986	1,202
Western	438	523	921	1,291
Total	2,695	4,046	2,944	4,746

U. S. S. R. — The number of reported trachoma cases increased from 133,887 in 1923 to 518,112 in 1924 and to 792,476 in 1925 — an increase which is probably due to improved notification.

It is seen from the table below that trachoma is most prevalent in Eastern Russia, especially in the Viatka-Vietluga, Ural and Middle Volga districts. Its incidence is higher in Western than in Central Russia and the Ukraine.

Geographical Distribution of Trachoma Cases reported in the U. S. S. R., 1924-25.

Geographical Areas	*1924*	*1925*	*Rate per 100,000 in 1925*
North-Eastern	3,611	4,487	191
North-Western	12,800	17,114	479
Western and White Russia	36,386	58,533	658
Central Industrial	17,979	43,251	227
Central Black Earth	15,601	24,948	232
Middle Volga	85,122	127,637	1,368
Lower Volga	36,731	40,200	793
Viatka-Vietluga	71,497	115,587	3,403
Ural	73,214	93,365	1,185
North Caucasus and Don	9,949	24,983	339
Ukraine	49,592	70,216	254
Transcaucasus	30,660	45,982	811
Siberia	55,629	65,910	591
Central Asia	18,693	46,827	415
Railways and Waterways	648	3,436	—
Total	518,112	792,476	592

Spain. — According to the latest available information, 49,413 persons were known to suffer from trachoma; the following forms of the disease are given:

With granulation, scars, pannus, entropion and ulcer of the cornea	6,038
With xerosis	875
Granulation without pannus	26,377
Granulation and pannus	9,745
Granulation, pannus and ulcers of the cornea	6,378

In 45,140 cases both eyes were affected, in 4,273 only one eye.

Malta. — Trachoma became notifiable in August 1922; 542 cases were reported in 1925, as against 488 in 1924 and 1,282 in 1923. The data for 1924 show 1.3 cases per 100,000 inhabitants for Malta, and 9.6 for Gozo.

Asia

Iraq. — It is estimated that 80 per cent of the population of *Baghdad* (270,000) have trachoma, and a very large proportion of these sustain permanent damage to the vision.

During 1923, 477 cases were treated in Civil Health Service Hospitals and 387 during 1924. In 1923, 9,721 new trachoma cases came for treatment to the four trachoma centres established by the Baghdad Municipality; the number rose to 16,838 new cases in 1924.

Syria. — The following data concerning "ophtalmie granuleuse" were reported in the annual medical report for 1921-24.

Cases of "Ophtalmie granuleuse".

	1921	*1922*	*1923*	*1924*
Beirut	1	—	—	—
Tripoli	9	101	51	18
South Lebanon	54	65	25	75
Mount Lebanon	30	125	42	35
Bakaa	12	—	—	—
Total	106	291	118	128

Australasia

New Zealand. — Notification of trachoma was made obligatory in 1917. The number of cases reported annually varied from 8 in 1918 to 20 in 1924 and 29 in 1925.

Africa

Tunisia. — Trachoma is a serious problem in Tunisia. Among 6,337 persons admitted to the ophthalmic clinic in Tunisia in 1923, 3,000 were found to be suffering from trachoma (47.5 per cent).

ANTHRAX

Statistics regarding the prevalence of anthrax are received only from few countries; information is scanty, especially for Asia, Africa, South America and the Balkan countries. The disease is obviously not very prevalent in North America, and in Northern, Western and Central Europe, but seems to constitute a more serious problem in the south-eastern territories of the *Soviet Union.*

Anthrax Cases reported in Various Countries, 1923-25.

Country	*1923*	*1924*	*1925*	*Country*	*1923*	*1924*	*1925*
Austria	7	7	14	Serbs, Croats and Slovenes (Kingdom)	—	—	501
Czechoslovakia	54	67	47	Switzerland	2	2	4
Denmark	1	8	3	U. S. S. R.	7,801	15,496	16,172
Germany	106	118	165	United States (19 States)	137	170	105
Italy	2,205	2,728	1,656	Uruguay	186	103	138
Lithuania	14	2	5	Australia	3	4	3
Poland	58	69	75	Iraq	11	4	10

Anthrax appears to be rare in Northern Russia and not very common in Western and Central Russia and in Siberia. Its incidence increases toward the south and is from 16 to 18 per 100,000 inhabitants in the Black Soil and Middle Volga districts and in the Ukraine. It is very prevalent in the Caucasus, the Don district and in the Crimea. There is thus a much greater danger of exporting the infection from the Black Sea ports than from the Baltic.

ANTHRAX CASES REPORTED IN THE U. S. S. R., 1924 AND 1925.

Geographical Areas	*1924*	*1925*	*Rate per 100,000 in 1925*	*Geographical Areas*	*1924*	*1925*	*Rate per 100,000 in 1925*
North-Eastern	1	7	0.3	Middle Volga	1,411	1,623	17.4
North-Western	22	40	0.7	Lower Volga	1,322	1,416	27.9
Western and White Russia	224	208	2.3	Viatka-Vietluga	61	79	2.3
Central Industrial	646	560	2.9	Ural	363	552	7.0
Central Black Soil	2,178	1,744	16.3	Siberia	588	361	3.2
Ukraine	5,392	5,041	18.2	Central Asia	617	1,132	10.0
Crimea	337	264	44.0	Railways and Waterways	148	82	—
North Caucasus and Don	1,541	2,191	32.2				
Transcaucasus	625	872	15.4	Total	15,496	16,172	11.6

There was a considerable increase of anthrax cases in Italy from 1921 to 1924, but the returns for 1925 are again lower. The disease is of infrequent occurrence in the north, but common in Southern Italy and prevalent in Latium and Basilicata.

ANTHRAX CASES REPORTED IN ITALY DURING 1924.

Province	*Cases*	*Rate per 100,000 population*	*Province*	*Cases*	*Rate per 100,000 population*
Piemont	37	1.1	Latium	517	31.9
Liguria	14	1.0	Campania	200	5.6
Lombardy	32	0.6	Apulia	206	9.0
Venetia	10	0.25	Basilicata	359	76.6
Emilia	5	0.16	Calabria	283	18.7
Tuscany	27	1.0	Sicily	252	6.2
Marches	14	1.2	Sardinia	629	7.3
Umbria	30	4.7			
Abruzzi	113	7.9	Total	2,728	7.3

Anthrax undergoes marked seasonal fluctuations; in Europe the maximum occurs in August or September, the minimum in March or April.

TUBERCULOSIS IN 1925

The downward trend of the tuberculosis mortality prevailing in practically all the cities of Western Europe and the United States in the past 40 years has not been altered in 1925. It has reappeared in certain cities of Eastern and Central Europe, where war and post-war conditions had previously checked the decline.

It is quite obvious that one must not put too much stress on the variations from one year to another, on account of the close correlation existing between the mortality from pulmonary tuberculosis and from the other pulmonary infections such as influenza.

It is, however, worthy of notice that the large majority of European cities show a decline which is consistent with their experience of past years.

Cities of South America and India show, on the other hand, an increase in mortality; what part of this increase is due to improved registration cannot be determined.

A distinction must be made between the cities, according to the exclusion or non-exclusion of the deaths of non-residents in the computation of rate. This is especially important in the case of tuberculosis, since many patients go to the cities to be hospitalised and may die there.

The decline of the mortality observed in European cities is of two types:

The most common is the steady and slow decline with minor yearly variations—example: London, Paris, Swiss, Dutch and Scandinavian cities.

In Eastern and Central Europe, on the other hand, abrupt changes have taken place in the last years: sharp reduction following a period of extremely high mortality.

Thus the mortality decreased in:

Budapest from 398 in 1924 to 291 in 1925;
Vienna from 299 in 1922 to 204 in 1925;
Moscow from 261 in 1922 to 157 in 1925;
Leningrad to 284 in 1925, as against 506 for pulmonary tuberculosis alone in 1920.

If in the former case the steady diminution in the tuberculosis mortality can be ascribed to the gradual bettering of living conditions of the population and their progressive immunisation, the marked changes in the latter group must be explained otherwise, and the only acceptable explanation seems to be the mass elimination of the unfit (and among them the tuberculous) in recent years through starvation and other adverse environmental factors, and the consequential survival of the fittest.

This hypothesis seems to be supported by the fact that the course of the general mortality is parallel to that of tuberculosis. For instance, in Moscow, the general mortality rate per 1,000 population was:

1901-10	27.0 per thousand	1922	29.0 per thousand
1911-15	22.7 »	1923	14.7 »
1919	45.1 »	1924	15.8 »
1920	41.4 »	1925	13.4 »
1921	26.3 »		

The diminution in the number of active tuberculosis patients will of course tend to lessen somewhat in the next few years the amount of infection in these communities, but this may not have a very lasting effect.

One must expect a wearing-off of the influence of the abnormal changes in the composition and resistance of the population brought by the events of the past years and a readjustment between the mortality and the actual environmental conditions.

Such was the course of the mortality in Western European and in American cities, when, after the sharp drop in the mortality following the influenza epidemic of 1918, there was an apparent check in the decline before the old downward trend of the pre-war days was resumed.

The urban rates of tuberculosis mortality are not absolute indices of the actual mortality in the different countries, because rural and urban rates are not identical. However, knowing the trend of both urban and rural mortality, we may with a certain degree of accuracy forecast the future course of the mortality in a given country.

It is seen from mortality figures for the last 50 or 75 years (when they are available) that the urban rates have been considerably higher than the rural but that their relative height has not been constant. The period of maximum tuberculosis mortality was earlier in the cities than in the country. The decline was felt, therefore, in the cities sooner than in the country, so that at the present time in all Western European countries the urban rate is declining; in the more industrialised and urbanised areas the country rates are also declining (in England, Scotland, Germany, New England, etc.), but in others, country rates are still stationary (period of maximum mortality), as is the case in France, Ireland and Switzerland. In others, country rates are still going up (in Japan, the Balkans, in some provinces of Spain, Sweden and Norway).

The situation can therefore be summarised thus: under normal conditions the decline in tuberculosis mortality is felt in the cities sooner than in the country; in the urbanised industrial States sooner than in the agricultural states, notwithstanding the fact that urban rates have remained constantly higher than the rural.

Though tuberculosis mortality is declining in most countries of Europe, in the registration area of the United States, in Eastern Canada, in Australia and New Zealand and in the cities of Japan, this decline is not world-wide. Indeed, the mortality from tuberculosis is stationary, if not increasing, in most countries of Central and South America, in India, the Malay States, French Indo-China, China, as it appears not only from official mortality records, which are scarce, but mainly from observations of local physicians.

In Equatorial Africa, tuberculosis brought by the European colonist is gradually spreading into the interior. Pirquet tests carried out among the population of the coastal towns in recent and in pre-war years show a marked increase of their tuberculisation. In French North Africa and in the Union of South Africa, where the tuberculosis bacillus was introduced much earlier, tuberculosis mortality is on the wane among the white population, practically stationary among individuals of mixed blood coming into close contact with the whites, and still increasing among the natives of the interior.

MORTALITY FROM TUBERCULOSIS IN VARIOUS CITIES IN 1924 AND 1925.

Cities	1924 Population in thousands	1924 Deaths	1924 Rates per 100,000	1925 Population in thousands	1925 Deaths	1925 Rates per 100,000	Increase or decrease %
(a) *Tuberculosis, all forms.*							
EUROPE:							
Cracow*	185	633	342	196	432	220	—35.7
Budapest*	958	3,816	398	961	2,798	291	—26.9
Bologna*	217	459	212	224	378	169	—20.3
Trieste	245	831	339	249	700	281	—17.1
Berlin*	4,032	5,860	145	4,014	4,867	121	—16.6
Copenhagen*	580	742	128	587	634	108	—15.6
Venice	195	478	245	201	416	207	—15.5
Hamburg*	1,091	1,439	132	1,079	1,234	114	—13.6
Oslo	258	467	181	258	431	167	—13.2
Brussels*	808	1,242	154	818	1,109	136	—11.7
Cologne*	713	980	137	727	883	121	—11.7
26 Swiss Cities*	1,107	1,546	140	1,166	1,458	125	—10.7
Dresden*	610	833	137	619	759	123	—10.2
Stockholm	425	725	171	439	675	154	— 9.9
Madrid	783	2,151	275	783	1,983	253	— 8.0
London*	4,577	5,320	116	4,602	4,932	107	— 7.8
Glasgow*	1,051	1,521	145	1,057	1,413	134	— 7.6
Leningrad	1,043	3,204	307	1,085	3,078	284	— 7.5
Sevilla	211	923	437	211	857	406	— 7.1
Brunn	222	554	250	222	517	233	— 6.8
Breslau*	565	789	140	555	729	131	— 6.4
Rotterdam*	540	630	117	548	602	110	— 6.0
Munich*	690	854	124	681	800	117	— 5.6
Barcelona	739	1,427	193	739	1,366	185	— 4.1
Belfast*	434	773	178	438	752	172	— 3.4
Tallinn	122	345	283	127	348	274	— 3.2
The Hague*	387	346	89	394	341	87	— 2.2
Valencia	260	478	184	260	467	180	— 2.2
Moscow	1,772	2,831	160	1,855	2,921	157	— 1.9
Paris*	2,906	8,219	283	2,906	8,134	280	— 1.1
Amsterdam*	712	694	97	718	693	97	0.–
Edinburgh*	426	567	133	427	566	133	0.–
Prague*	702	1,224	174	713	1,244	174	0.–
Strasburg*	167	394	236	167	394	236	0.–
Genoa*	314	671	214	335	734	219	+ 2.3
Lille*	201	489	243	201	506	252	+ 3.7
Milan*	847	1,554	183	722	1,376	191	+ 4.4
Lodz	527	1,474	280	527	1,545	293	+ 4.6
Dublin*	435	762	175	438	814	185	+ 5.8
Vienna[1]*	1,868	3,345	179	1,870	3,811	204	+14.0
Lyon	562	1,281	228	562	1,465	261	+14.5
Pilsen	108	219	203	108	260	241	+18.7
AMERICA:							
New Orleans	410	690	168	414	551	133	—20.8
New York	6,016	5,587	93	6,252	5,469	87	— 6.4
Boston	777	798	103	780	768	98	— 4.9
Chicago	2,943	2,456	83	2,995	2,482	83	0.–
São Paulo	790	824	104	850	911	107	+ 2.9
San Francisco	548	524	96	558	572	103	+ 7.3
St. Louis	813	577	71	822	743	90	+26.8
Buenos Aires[2]	1,812	2,976	164	1,856	3,682	198	+20.7

* Excluding non-residents.
[1] Data for eleven months.
[2] Data for ten months.

Cities	*1924*			*1925*			
	Population in thousands	*Deaths*	*Rates per 100,000*	*Population in thousands*	*Deaths*	*Rates per 100,000*	*Increase or decrease %*
AFRICA:							
Alexandria	477	751	157	487	710	146	— 7.0
Cairo.	804	903	112	819	966	118	+ 5.4
ASIA:							
Manila	308	1,902	617	308	1,132	368	—40.3
Singapore*	396	1,206	305	396	1,257	317	+ 3.9
(b) *Pulmonary Tuberculosis.*							
EUROPE:							
Sofia	154	540	351	154	646	419	+19.4
AMERICA:							
Montevideo [1]	393	944	262	423	1,057	272	+ 3.8
Havana	387	975	252	399	1,062	266	+ 5.6
ASIA:							
Bombay [2]	1,149	1,365	121	1,259	1,160	94	—22.3
Madras [2]	527	1,339	260	527	1,468	284	+ 9.2
Calcutta [3].	1,077	2,007	198	1,077	2,312	228	+15.2
Rangoon [2]	346	941	350	346	1,168	434	+24.0

* Excluding non-residents.
[1] Data for eleven months.
[2] Data for 51 weeks.
[3] Data for 49 weeks.

INFANT MORTALITY

It will be seen from the table on page 149 giving infant mortality rates for the years 1924 and 1925 for a number of cities in different parts of the world that, broadly speaking, the rate was lowest in Northern, Western and Central Europe and in the United States and highest in Southern and Eastern Europe and in Egypt. In other words, the infant mortality was lowest where the birth-rate was low, the climate not extreme — especially without high summer temperatures of long duration — and where sanitary conditions in general were good.

It appears, however, that a high infant mortality does not invariably result from a moderately high birth, but that their frequent relation rather depends on the fact that large families are more common among the classes which live under unsatisfactory social and sanitary conditions. This is shown by the data for the Dutch cities, where the birth rate (20.6), as seen from the figures on page 148, was considerably higher than in most other cities in Northern and Central Europe and where the infant mortality rate nevertheless was lower than anywhere else. There can be little doubt that this favourable condition must be largely due to the climate of the Netherlands, with its mild winters and cool summers, to the prevalence of breast-feeding, to the cleanliness of the people, and to the fact that housing conditions generally are better than in most other parts of Europe. There is less overcrowding, and the dominant type of dwelling, as in England, is the one- or two-family house. In 1925, the infant mortality was only 37 per 1,000 live births, *i.e.*, 96 per cent of the children born alive survived the first year of life. In the cities of Egypt, on the contrary, about one-fourth of the new-born children did not survive the first year.

In Europe, the lowest rates next to those of the Dutch cities were those of the Scandinavian capitals, the Swiss towns and London. Thus, in 1925, the infant mortality rate for Oslo was 42, for Stockholm 48, for the Swiss cities 49, for London 66, and for Copenhagen 67, per 1,000 living births. Among the cities of the United States included in the table, San Francisco and New York had the lowest figures: only 50 and 64 respectively.

The rates were mostly below 100 in Northern, Western and Central Europe. Only at Glasgow, Dublin, Belfast, Munich and Prague were they slightly higher. The infant mortality rates were higher than 100, on the other hand, in all cities of Southern and Eastern Europe with the exception of Milan and Genoa, where it was 87 and 71 respectively in 1924.

Comparison of the infant mortality rates for 1924 and 1925 shows only trifling changes, except for the relatively few towns included in the table below. It need hardly be pointed out, however, that changes occurring within a single year need not be significant and do not necessarily reflect the general trend.

Towns	*Infant mortality rate*		*Percentage increase (+) or decrease (—) in 1925*
	1924	*1925*	
Milan	87	101	+ 16
Belfast	85	108	+ 27
Suez	132	191	+ 45
Genoa	71	112	+ 58
Lower Egypt	126	208	+ 65
Upper Egypt	166	303	+ 83
Venice	147	128	— 13
Glasgow	119	101	— 16
Budapest	155	126	— 18
Cracow	131	108	— 18
Munich	129	105	— 19
Seville	200	153	— 24
Warsaw	238	160	— 33

When studying the table on page 149 with special reference to seasonal fluctuations in infant mortality, two facts are at once apparent: that the summer maximum is mostly very little marked, if not, as for instance in the Netherlands, wholly absent, in Northern, Western and Central Europe and the United States, and that, on the contrary, there is a very marked rise in the infant mortality during the hot season in Southern and Eastern Europe as well as in Egypt. It is obvious that climatic conditions favour the lower summer mortality in the northern countries, but it will be recalled that even there the infant mortality was excessive in the summer months before the great general decline set in some twenty or thirty years ago.

The seasonal curve rises highest in Egypt, where during May-August the infant mortality rate was between 400 and 500. Among European cities, Seville, Madrid and Moscow show the highest summer mortality; in Seville it rose in June to 293, in Madrid in July to 238, and in Moscow in the same month to 227. The lowest summer death rate was in the Dutch cities, with an average for June and August of only 31. An exceptionally low figure, though for a single month only, was recorded at Stockholm, where the infant mortality rate fell to 19 in July.

The immense difference between the cities with the highest and the lowest infant mortality rates in the table shows the great possibilities for improvement which still remain. The table below shows the progress which has already been achieved in certain cities.

INFANT MORTALITY RATES IN DIFFERENT CITIES, 1881-1925.

Cities	*1881-1885*	*1886-1890*	*1891-1895*	*1896-1900*	*1901-1905*	*1906-1910*	*1911-1915*	*1916-1920*	*1921*	*1922*	*1923*	*1924*	*1925*
London	150	153	156	162	139	114	109	92	81	75	61	69	66
Edinburgh	127	136	140	144	131	119	115	105	96	91	82	89	91
Glasgow	151	143	146	151	140	130	134	115	106	120	90	119	101
Dublin	176	175	169	175	158	146	151	148	134	116	118	118	112
Paris	162	152	135	119	110	106	111	104	95	87	90	88	89
Berlin	279	264	242	218	202	164	148	144	123	140	123	96	92
Hamburg	222	260	226	182	174	150	128	110	97	109	101	86	81
Stockholm	208	182	170	169	136	103	80	64	61	52	53	51	48
Oslo	156	168	158	152	119	96	98	68	54	68	47	47	42

Infant Mortality Rates in Different Cities, 1881-1925 *(continued)*.

Cities	*1881-1885*	*1886-1890*	*1891-1895*	*1896-1900*	*1901-1905*	*1906-1910*	*1911-1915*	*1916-1920*	*1921*	*1922*	*1923*	*1924*	*1925*
Vienna	196	196	219	195	178	172	148	139	130	125	105	98	—
Prague	218	200	194	170	163	156	153	132	117	111	93	99	100
Budapest	244	237	199	174	149	151	156	172	160	168	166	155	126
Milan	156	161	158	147	146	129	122	129	101	96	102	87	101
Moscow	340	320	316	286	262	313	269	249	—	—	—	177	—
Buenos Aires	185	209	151	120	93	100	—	—	—	—	—	85	86

It will be seen that only in a few of the above-mentioned cities was there any steady decrease of the infant mortality as early as in the eighties of last century. The decrease did not set in at Berlin, Hamburg, Oslo, Milan and Buenos Aires until the beginning of the nineties and in Vienna, London, Edinburgh and Dublin not until the beginning of the twentieth century.

STATISTICS

OF

Notifiable Diseases

in 1925

(In the alphabetical order of the French, by continents and countries, except for several countries which, through technical exigences, have been displaced.)

AFRIQUE - AFRICA

AFRIQUE EQUATORIALE FRANCAISE — FRENCH EQUATORIAL AFRICA

(Population: 4 234 900. E. 1925.)

Sources: Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies. Compte rendu des maladies pestilentielles.

Maladie — Disease			1925											
			Total	Janv Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	C.	272	—	—	§§	—	33	97	34	36	21	—	53	—
		D.	94						32	24	9	7	—	22	—
Fièvre récurrente	Relapsing fever	C.	—	§§	§§	§§	§§	§§	§§	8	§§	26	30	10	—
		D.	1405	341	963	75	21	††	††	0	—	1	3	1	—
Fièvre typhoïde	Typhoid fever	C.	0	0	0	0	2	0	0	0	0	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	2	0	2	0	0	0	0	0	0	0	0	0	0
Trypanosomiase	Trypanosomiasis	C.	164	—	—	—	—	116	48	—	—	—	—	—	—
Variole	Smallpox	C.	22	§§	5	§	§§	§§	6	11	§§	0	§	—	—
Beriberi	Beri-beri	C.	45	—	—	—	—	—	11	11	23	—	—	—	—
		D.	6	—	—	—	—	—	—	6	—	—	—	—	—

AFRIQUE OCCIDENTALE FRANCAISE — FRENCH WEST AFRICA

Sources: Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies. Compte rendu des maladies pestilentielles.

Dahomey (Population: 842 240. R. 1er juil. 1921.)

Dysenterie	Dysentery	C.	247	§§	60	60	§	—	§	92	15	20	—	—	—
Fièvre récurrente	Relapsing fever	C.	640	—	§§	—	500	—	0	0	0	40	100	—	—
		D.	270	—	††	—	200	—	0	0	0	30	40	—	—
Lèpre	Leprosy	C.	6	0	0	0	0	0	0	2	4	0	0	0	0
Paludisme	Malaria	C.		§§	§§	§§	§§	—	§	§	§§	—	—	—	—
Variole	Smallpox	C.	53	§	§§	53	§§	—	§	0	§	—	§	—	§

Haute Volta — Upper Volta (Population: 2 973 440. R. 1er juil. 1921.)

Dysenterie	Dysentery	C.	204	—	—	—	—	—	—	1	203	—	—	—	—
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	5	0	0	0	0	0	0	0	0	2	2	—	1
		D.	2	0	0	0	0	0	0	0	0	0	0	1	1
Fièvre récurrente	Relapsing fever	C.	1565	78	236	173	311	74	427	§	0	51	52	239	230
		D.	401	26	37	49	83	38	110	0	0	21	20	37	37
Lèpre	Leprosy	C.	119	—	§	—	—	—	—	—	119	—	—	—	—
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	15	2	6	7	0	0	0	0	0	0	0	0	0
		D.	8	2	6	—	0	0	0	0	0	0	0	0	0
Rougeole	Measles	C.	715	—	§§	§§	696	§	§§	5	14	—	—	—	—
		D.	275	—	—	††	275	—	—	—	—	—	—	—	—
Trypanosomiase	Trypanosomiasis	C.	6	—	3	—	—	—	—	—	3	—	—	—	—
Variole	Smallpox	C.	1157	§	§	§	114	88	940	8	—	—	7	—	§
		D.	56	—	—	—	—	39	17	—	—	—	—	—	—

Niger (Population: 1 084 040. R. 1er juil. 1921.)

Dysenterie	Dysentery	C.	1	0	0	0	0	0	0	1	0	0	0	0	0
Fièvre récurrente	Relapsing fever	C.	—	§§	§§	§§	§§	§§	—	—	—	—	§	—	§
		D.	811	367	403	††	††	41	—	—	—	—	—	—	—
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	3	1	2	0	0	0	0	0	0	0	0	0	0
		D.	3	2	1	0	0	0	0	0	0	0	0	0	0
Trypanosomiase	Trypanosomiasis	C.	3	1	2	0	0	0	0	0	0	0	0	0	0
		D.	2	1	1	0	0	0	0	0	0	0	0	0	0
Variole	Smallpox	C.	49	0	—	§	44	5	0	0	0	0	0	0	0
		D.	6	0	—	†	5	1	0	0	0	0	0	0	0

Sénégal (Population: 1 225 520. R. 1er juil. 1921.)

Diphtérie	Diphtheria	C.	3	3	—	0	0	0	0	0	0	0	0	0	0
		D.	1	1	—	0	0	0	0	0	0	0	0	0	0
Paludisme	Malaria	C.	124	§	—	§	§§	§	§	124	§§	§	—	—	—
Peste	Plague	C.	402	0	0	15	87	63	35	119	38	29	23	0	0
		D.	235	0	0	16	55	27	17	70	23	14	13	0	0
Rougeole	Measles	C.	236	—	—	§	§§	68	58	68	42	§	—	—	—
		D.	70	—	—	—	20	24	—	15	11	—	—	—	—
Variole	Smallpox	C.	9	0	—	0	§§	9	0	0	0	0	0	0	0
		D.	2	0	—	0	—	2	0	0	0	0	0	0	0

§ Quelques cas. — A few cases.
§§ De nombreux cas. — Numerous cases.
† Quelques décès. — A few deaths.
†† De nombreux décès. — Numerous deaths.
Note. — Les données sont incomplètes. — Data are incomplete.

ALGÉRIE — ALGERIA

(Population: 5 806 090. R. 6 mars 1921.)

Source: Bulletin Sanitaire de l'Algérie.

Maladie — Disease	Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas *Cases*																	
Conjonctivite purul. et ophtalmie granuleuse — Purul. conjunctivitis and granulous ophthalmia	0	1	6	17	3	0	0	0	0	1	0	0	0	0	2	0	0
Coqueluche — Whooping-cough	18	20	50	25	42	2	4	7	17	5	3	1	1	1	0	0	3
Diphtérie — Diphtheria	726	370	439	575	372	45	24	34	30	22	17	28	12	30	45	46	45
Dysenterie — Dysentery	41	118	306	139	143	4	3	0	2	3	14	56	24	6	6	15	11
Encéphalite létharg. — Encephalitis letharg.	11	13	7	4	2	0	1	0	1	0	0	0	0	0	0	0	0
Erysipèle — Erysipelas	38	30	29	50	68	8	8	10	2	8	10	5	2	9	3	2	1
Fièvre méditerran. — Mediterranean fever	18	11	9	5	10	1	0	1	1	0	3	0	0	0	0	0	4
Fièvre récurrente — Relapsing fever	18	5	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre typhoïde — Enteric fever	1288	751	712	750	615	39	37	25	40	31	39	58	50	67	100	54	75
Grippe — Influenza	204	944	411	181	126	40	42	21	10	3	2	0	3	1	2	1	1
Infections puerpérales — Puerperal infections	12	33	19	11	20	1	4	1	1	3	2	1	0	2	3	1	1
Lèpre — Leprosy	1	4	3	2	2	1	0	0	0	0	0	0	1	0	0	0	0
Maladies à trypanosome et à pyroplasmes — Trypanosomiasis and Kala-azar	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Maladies choléri formes — Cholera nostras	2	32	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Méningite cérébro-spinale épidém. — Epidemic cerebro-spinal meningitis	31	61	61	38	51	5	5	9	7	3	12	3	0	0	1	2	4
Oreillons — Mumps	358	395	919	875	590	89	171	94	88	40	29	11	14	4	6	10	34
Paludisme — Malaria	156	206	231	148	35	3	2	0	1	3	1	6	7	7	2	3	0
Peste — Plague	195	19	6	7	4	0	0	0	0	1	0	0	0	0	1	1	0
Pneumonie et broncho-pneumonie — Pneumonia and broncho-pneumonia	736	1563	1226	392	463	54	54	66	75	52	43	15	18	15	22	25	27
Poliomyélite aiguë — Acute poliomyelitis	13	2	5	1	1												
Rougeole — Measles	726	1647	692	650	854	89	83	127	178	72	43	31	23	8	4	29	185
Scarlatine — Scarlet fever	87	111	163	219	240	35	35	30	21	15	11	26	13	9	4	5	10
Suette miliaire — Miliary fever	0	0	1	1	0												
Teigne — Favus	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuberculose pulmon. — Pulmon. tuberculosis	1171	1416	1323	831	623	37	80	72	48	56	72	63	40	12	39	41	43
Typhus exanthém. — Typhus	6360	1233	1666	471	540	21	32	42	105	97	114	77	22	7	7	10	10
Varicelle — Chicken-pox	—	—	—	129	124	6	9	8	6	6	29	10	12	2	24	8	4
Variole — Smallpox	755	184	141	483	1747	170	127	101	101	139	215	115	73	46	75	140	440

Note. — Les données mensuelles sont provisoires ; les totaux annuels sont corrigés. — Monthly data are provisional ; annual totals are corrected.

BASSOUTOLAND — BASUTOLAND

(Population: 498 781. R. mai 1921.)

Sources: The *Lancet*, London, March 10th, 1923.
Rapport annuel du médecin principal, 1923. — Annual Report of the Principal Medical Officer, 1923.
Rapports du Ministère britannique de Santé, 1924-1925. — Reports from the British Ministry of Health, 1924-1925.

Période de quatre semaines se terminant le: Four-week period ending:		Dysenterie Dysentery		Grippe Influenza		Méningite cérébro-spinale Cerebro-spinal meningitis		Pneumonie Pneumonia		Typhus exanthématique Typhus		Variole Smallpox	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Total	1921	187	14	963	2	—	—	79	2	503	93	521	53
»	1922	89	2	530	2	4	—	77	6	402	70	421	46
»	1923	56	1	337	0	8	1	106	2	958	120	617	14
»	1924	110	0	693	0	3	2	149	2	556	41	227	15
»	1925	131	0	599	0	3	1	154	1	58	6	51	0
Janvier—January	24	4	0	38	0	0	0	12	0	1	0	20	0
Février—February	21	20	0	34	0	0	0	7	0	9	0	7	0
Mars—March	21	17	0	24	0	0	0	5	0	9	1	17	0
Avril—April	18	12	0	29	0	0	0	9	0	3	0	7	0
Mai—May	16	8	0	36	0	0	0	15	0	3	0	0	0
Juin—June	13	5	0	20	0	0	0	8	0	2	0	0	0
Juillet—July	11	4	0	16	0	1	0	3	0	3	0	0	0
Août—August	8	3	0	31	0	1	1	12	0	0	0	0	0
Septembre—September	5	4	0	153	0	1	0	15	0	9	4	0	0
Octobre—October	3	8	0	50	0	0	0	12	1	10	0	0	0
Octobre—October	31	3	0	56	0	0	0	15	0	0	0	0	0
Novembre—November	28	25	0	56	0	0	0	23	0	2	0	0	0
Décembre—December	26	16	0	46	0	0	0	15	0	2	0	0	0
1926 Janvier—January	2*	2	0	10	0	0	0	3	0	5	1	0	0

* Une semaine seulement. — One week only.

CAMEROUN (Pays sous mandat français) — CAMEROONS (French Mandated Territory)

(Population: 3 000 750 R. 1. juil. 1921.)

Sources: Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies. Compte rendu des maladies pestilentielles.

Maladie — Disease			Total 1925	1925											
				Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Lèpre	Leprosy	C.	704	—	591	—	—	—	—	88	—	—	25	—	—
Dysenterie	Dysentery	C.	2569	83	65	141	141	74	40	§§	445	578	923	17	—
		D.	33	5	1	3	2	5	5	—	—	8	1	3	—
Fièvre récurrente	Relapsing fever	C.	1004	§§	§§	§§	§§	777	§§	1	11	201	—	14	—
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	5	1	0	0	0	0	4	0	0	0	—	—	—
		D.	2	1	0	0	0	0	1	0	0	0	—	—	—
Trypanosomiase	Trypanosomiasis	C.	15020	7807	1704	§§	2508	443	505	553	349	327	319	281	224
		D.	458	458	††	††	††	††	††	††	††	††	—	—	—
Variole	Smallpox	C.	32	2	0	1	13	13	2	0	0	0	1	—	—
		D.	1	0	0	0	0	1	0	0	0	0	0	—	—

§§ De nombreux cas. — Numerous cases.
†† De nombreux décès. — Numerous deaths.
Note. Les données sont incomplètes. — Data are incomplete.

CONGO BELGE — BELGIAN CONGO

(Population: 8 421 374. R. 1920.)

Cas et décès de certaines maladies épidémiques traités dans les hôpitaux pendant l'année 1925.
Cases of and Deaths from Certain Communicable Diseases treated in Hospitals during the Year 1925.

Source: Rapport de l'Inspecteur du Service sanitaire des Colonies. Report from the Inspector of the Colonial Sanitary Service.

Maladie — Disease		Province du Congo-Kasai Congo-Kasai Province		Province de l'Equateur Equator Province		Province Orientale Eastern Province		Province du Katanga Katanga Province		Total	
		Traités Treated	Décès Deaths	Traités Treated	Décès Deaths	Traités Treated	Décès Deaths	Traités Treated	Décès Deaths	Traités Treated	Décès Deaths
Dysentérie amoebienne	Amœbic dysentery	617	41	83	4	104	11	39	3	843	59
Dysenterie bacillaire	Bacillary dysentery	45	6	99	7	—	—	372	94	516	107
Grippe	Influenza	361	10	146	1	121	5	1128	20	1756	36
Méningite cérébro-spin.	Cerebro-spinal mening.	12	5	—	—	23	7	245	212	280	224
Pneumonie	Pneumonia	531	135	18	6	200	27	—	—	749	168
Tuberculose pulmonaire	Pulmonary tuberculosis	67	8	33	15	86	14	26	21	212	58
Varicelle / Variole / Varioloïde	Chickenpox / Smallpox / Varioloid	508	14	395	50	40	1	342	16	1285	81
Total	Total	2141	219	774	83	574	65	2152	366	5641	733

COTE DE L'OR — GOLD COAST

(Population: 2 029 754. R. 1921.)

Sources: Rapports du Gouvernement de la Côte de l'Or, 1923. — Reports from the Government of the Gold Coast, 1923. Rapports du Ministère britannique de Santé, 1924-1925. — Reports from the British Ministry of Health, 1924-1925.

Maladie — Disease			Total 1923	Total 1924	Total 1925	1925											
						Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	C.	406	293	440	13	35	26	22	36	24	51	70	48	51	36	28
		D.	38	28	28	0	4	6	3	1	2	1	3	4	0	2	2
Fièvre jaune	Yellow fever	C.	26	8	6	0	0	0	1	0	0	1	0	1	1	1	1
		D.	18	7	4	0	0	0	0	0	0	1	0	1	0	1	1
Fièvre récurrente	Relapsing fever	C.	160	16	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Grippe	Influenza	C.	55	86	173	1	13	4	4	13	1	4	0	1	5	45	82
		D.	0	33	7	0	2	2	0	0	0	0	0	0	0	1	2
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Peste	Plague	C.	0	322	3	0	0	2	1	0	0	0	0	0	0	0	0
		D.	0	273	3	0	0	2	1	0	0	0	0	0	0	0	0
Pneumonie	Pneumonia	C.	332	284	329	22	47	21	37	17	22	18	26	27	28	31	33
		D.	69	60	69	2	6	4	2	3	6	6	6	5	9	10	10
Poliomyélite aiguë	Acute poliomyelitis	C.	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
		D.	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
Variole	Smallpox	C.	13	153	1468	19	95	140	113	12	742	159	130	14	21	5	18
		D.	0	4	150	1	16	10	2	0	70	36	10	4	0	0	1

COTE D'IVOIRE — IVORY COAST

(Population: 1 545 680. R. 1er juil. 1921.)

Sources: Rapports du Ministère français des colonies. — Reports from the French Ministry of Colonies.
Compte rendu des maladies pestilentielles.

Maladie — Disease			Total 1925	1925											
				Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	C.	§§+105	—	§§	§§	—	§§	§§	70	35	—	—	—	—
		D.	28	—	2	—	—	—	—	7	19	—	—	—	—
Fièvre jaune	Yellow fever	C.	3	—	0	0	0	0	1	0	—	—	—	—	—
		D.	1	—	0	0	0	0	1	0	—	—	—	—	—
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	10	—	—	—	—	—	10	—	—	—	—	—	—
		D.	3	—	—	—	—	—	—	—	—	3	—	—	—
Rougeole	Measles	C.	§§	—	§§	§§	—	§§	—	—	—	—	—	—	—
Variole	Smallpox	C.	1	—	1	0	0	0	0	0	—	—	—	—	—

§§ De nombreux cas. — Numerous cases.
Note. Les données sont incomplètes. — Data are incomplete.

CYRÉNAÏQUE — CYRENAICA

(Population: 225 000. E. 1921.)

Source: Bolletino delle Malattie infettive nel Regno.

Maladie — Disease		Total 1924	Total 1925	1925											
				Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	1 Juil. — 15 Août	Août Aug. 16-31	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*														
Diphtérie	Diphtheria	6	2	0	0	0	1	0	0	0	0	0	0	0	1
Dysenterie	Dysentery	14	2	1	0	0	0	0	0	0	0	0	0	0	1
Fièvres typhoïde et paratyphoïde	Enteric fever	103	79	9	3	3	2	4	2	7	4	14	11	11	9
Méningite cérébro-spinale	Cerebro-spinal meningitis	3	2	0	0	0	1	0	0	0	0	0	0	1	0
Rougeole	Measles	4	46	0	1	7	12	2	0	1	2	1	3	17	0
Varicelle	Chickenpox	—	53	4	18	13	2	9	4	1	0	2	0	0	0
Variole	Smallpox	6	25	0	0	0	2	6	3	2	6	6	0	0	0

GUINÉE FRANÇAISE — FRENCH GUINEA

(Population: 1 875 950. R. 1er juil. 1921.)

Sources: Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies.
Compte rendu des maladies pestilentielles.

Maladie — Disease			Total 1925	1925											
				Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	C.	58	—	0	0	0	0	10	0	35	0	6	0	7
		D.	14	—	0	0	0	0	0	0	10	0	4	0	0
Lèpre	Leprosy	C.	8	—	0	4	0	0	0	4	0	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	4	—	0	1	0	0	0	0	0	1	0	0	2
		D.	1	—	0	1	0	0	0	0	0	0	0	0	0
Rougeole	Measles	C.	88	§	§	1	1	1	0	20	0	20	5	30	10
		D.	15	—	0	0	0	0	0	15	0	0	0	0	0
Variole	Smallpox	C.	6+§§	—	§	4	§	§	§§	—	—	1	1	—	—
		D.	20	—	—	—	—	—	20	—	—	—	—	—	—

§ Quelques cas. — A few cases.
§§ De nombreux cas. — Numerous cases.
Note. Les données sont incomplètes. — Data are incomplete.

ÉGYPTE — EGYPT

(Population: 13 964 900. E. 30 juin 1925.)

Source: Weekly Return of Births, Deaths and Infectious Diseases.

Semaine se terminant le: Week ending:	Diphtérie Diphtheria		Fièvre typhoïde Enteric fever		Méningite céré.-spin. Cere.-spinal meningitis		Peste Plague		Rougeole Measles		Scarlatine Scarlet fever		Typhus exanthém. Typhus		Varicelle Chickenpox		Variole Smallpox	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Total 1919	977	347	2707	587	85	52	877	473	3514	1642	206	15	16986	5573	458	28	7928	193
» 1920	810	316	1799	426	43	28	463	269	9244	3753	135	19	13253	3510	453	9	3021	80
» 1921	873	336	1380	346	43	19	358	153	3048	1254	166	15	4487	1271	372	1	93	2
» 1922	959	422	1689	437	41	25	487	228	5607	2583	134	3	2489	723	337	0	309	9
» 1923	1137	464	1765	466	44	37	1519	725	17871	7673	107	5	1935	603	522	13	519	14
» 1924	1545	689	1794	462	18	13	373	193	3606	1750	164	8	1683	588	416	10	799	22
1925	1784	734	1978	570	32	22	138	77	12970	6084	117	16	1314	290	585	14	762	15
Janvier — January 7	26	17	14	9	0	0	11	4	27	9	1	0	6	3	4	0	0	0
14	13	8	17	7	0	0	2	2	37	18	0	0	11	4	5	1	2	0
21	19	10	12	6	0	0	1	1	44	13	0	0	12	6	12	0	3	2
28	27	10	15	3	1	1	1	1	54	14	3	0	2	2	10	0	3	1
Février — February 4	34	21	15	5	0	0	0	0	27	8	3	0	11	0	11	0	22	2
11	24	10	19	4	1	1	0	0	32	8	2	0	2	1	9	0	4	0
18	32	10	24	8	1	1	0	0	71	13	2	1	39	3	17	0	1	1
25	30	13	27	15	3	2	0	0	64	14	4	0	27	10	13	0	4	0
Mars — March 4	19	14	19	5	3	1	0	0	38	15	2	0	36	6	16	0	14	1
11	30	13	21	4	1	0	0	0	62	13	2	0	59	8	19	0	8	1
18	18	9	16	11	2	2	0	0	95	27	1	0	45	8	23	0	8	0
25	23	9	21	5	0	0	0	0	66	15	1	0	38	11	30	0	9	2
Avril — April 1	23	15	32	5	1	0	1	0	94	33	0	0	29	7	24	0	2	0
8	26	9	17	4	0	0	5	3	60	30	1	0	49	8	36	0	17	3
15	15	6	21	5	1	0	2	2	111	39	1	0	42	5	23	0	20	4
22	16	5	18	8	1	1	1	1	153	71	1	0	28	8	19	0	24	3
29	19	7	17	8	0	0	0	0	150	67	3	1	71	17	17	0	50	5
Mai — May 6	28	12	38	7	0	0	4	4	301	111	1	0	72	14	34	0	21	2
13	32	12	35	7	0	0	12	5	254	90	5	0	53	10	54	0	10	2
20	23	7	56	6	0	0	4	3	377	153	5	0	97	19	32	2	4	6
27	33	7	41	12	1	2	9	3	427	173	1	0	65	16	25	2	8	3
Juin — June 3	41	16	37	13	0	0	4	0	403	163	1	0	100	14	30	0	34	4
10	36	12	31	9	2	0	7	4	431	145	4	0	62	9	23	0	26	4
17	44	19	35	13	1	1	10	6	415	173	9	0	27	9	14	0	18	7
24	30	6	47	14	0	0	1	2	384	208	3	1	14	8	16	3	17	5
Juillet — July 1	21	12	49	23	0	0	3	2	590	307	6	0	15	5	1	0	12	5
8	14	6	35	14	0	0	3	2	365	222	2	0	49	8	4	0	14	3
15	21	9	42	11	0	0	7	5	634	355	3	2	12	0	4	1	9	0
22	24	12	57	16	0	0	0	0	414	196	1	1	15	4	5	1	14	8
29	29	8	45	10	0	0	1	1	541	283	4	2	14	3	3	0	3	3
Août — August 5	37	17	68	20	1	1	1	0	341	157	3	2	16	4	3	0	5	1
12	46	16	53	20	0	0	6	2	490	311	2	0	10	3	0	0	6	0
19	33	13	66	21	0	0	2	2	340	168	0	0	13	7	1	1	6	1
26	40	19	71	20	1	0	0	0	415	172	3	1	9	2	1	0	6	1
Septembre—September 2	40	17	64	21	1	0	11	3	480	328	4	3	7	0	3	0	15	0
9	46	19	61	15	1	1	2	1	273	156	3	0	12	0	4	0	12	0
16	46	18	78	16	1	1	2	2	291	152	3	1	8	3	2	0	8	1
23	52	22	68	16	0	0	1	1	230	121	3	0	16	1	4	0	5	1
30	44	19	58	24	0	0	0	0	233	134	3	0	5	3	1	0	9	0
Octobre — October 7	43	16	49	10	2	0	3	3	201	97	2	0	12	3	0	0	8	3
14	41	15	58	16	1	1	9	1	221	119	0	0	6	1	3	0	8	3
21	61	30	64	8	1	1	5	3	299	163	3	0	8	3	3	0	6	0
28	42	19	37	18	0	0	3	4	206	98	0	0	4	2	1	1	9	5
Novembre — November 4	55	28	42	13	1	1	1	1	183	62	2	1	6	2	3	0	10	3
11	51	21	44	12	0	0	1	1	250	86	2	0	9	4	2	0	6	1
18	43	14	52	12	0	0	1	1	147	66	2	0	3	2	1	0	1	0
25	46	19	32	8	1	2	0	0	222	72	2	0	5	2	4	0	45	7
Décembre—December 2	48	13	40	14	0	0	0	0	269	84	2	0	17	5	3	0	28	3
9	46	13	29	3	0	0	1	1	212	92	0	0	7	2	3	1	51	3
16	50	21	21	4	0	0	0	0	276	163	1	0	11	5	2	1	23	12
23	55	24	21	6	0	0	0	0	296	122	3	0	14	6	5	0	72	20
*31	49	17	29	6	2	2	0	0	374	175	2	0	14	4	3	0	42	5

Choléra asiatique: 1 cas a été constaté en 1920. — Asiatic cholera: 1 case reported in 1920.

	1919	1920	1921	1922	1923	1924	1925
Fièvre récurrente C.	3221	2898	1208	172	39	5	3
Relapsing fever D.	591	429	197	35	6	0	0

* Données pour huit jours. — Data given for eight days.

KENIA ET PROTECTORAT DE L'EST AFRICAIN — KENYA AND EAST AFRICAN PROTECTORATE

(Population: 2 376 000. R. 24 avril 1921.)

Sources: Rapports du médecin principal, 1923 et 1924. — Reports from the Principal Medical Officer, 1923 and 1924. Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas *Cases*															
Méningite cérébro-spinale [1] Cerebro-spinal meningitis [1]	50	36	33	2	1	2	2	1	0	0	5	7	12	1	0
Peste Plague	*1090	477	1096	35	23	32	56	100	414	29	57	59	153	72	66
Variole [1] Smallpox [1]	*108	3	328	8	59	81	60	30	1	49	20	5	0	9	6

Avant 1923, les rapports médicaux annuels mentionnent la fréquence de la peste et de la variole, mais ne donnent pas de chiffres exac à leur sujet. Le nombre de cas de méningite cérébro-spinale fut de 133 pour 1919, de 60 pour 1920, et de 71 pour 1921. — Before 192 the Annual Medical Reports discuss the prevalence of plague and smallpox, but do not give the exact figures. Cases of cerebro-spin meningitis were reported as follows: 1919, 133; 1920, 60; 1921, 71.

* Nombre approximatif. — Approximate number.

[1] 27 décès de méningite cérébro-spinale et 1 de variole furent déclarés en 1923. — 27 deaths from cerebro-spinal meningitis and 1 fro smallpox were reported in 1923.

MADAGASCAR

(Population: 3 382 161. R. 1 juil. 1921.)

Sources: Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies. Compte-rendu des maladies pestilentielles.

Maladie — Disease			Total	1925										
				Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	C.	167	—	—	—	—	—	—	—	61	12	30	16	48
Fièvre récurrente	Relapsing fever	C.	1	—	—	—	—	—	—	—	—	—	1	—	—
		D.	11	—	—	—	—	—	—	—	—	—	1	—	—
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	—	—	—	—	—	—	—	—	3	—	3	—	5
		D.	1	—	—	—	—	—	—	—	1	—	—	—	—
Lèpre	Leprosy	C.	147	—	—	—	—	—	—	—	34	22	20	29	42
		D.	32	—	—	—	—	—	—	—	—	5	6	9	12
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	1	—	—	—	—	—	—	—	—	—	1	—	—
		D.	1	—	—	—	—	—	—	—	—	—	1	—	—
Peste	Plague	C.	1769	143	228	172	134	71	40	23	76	70	177	232	403
		D.	1579	122	189	140	108	67	36	23	74	67	161	220	372
Rougeole	Measles	C.	716	—	—	—	—	—	—	—	168	103	341	50	54
Scarlatine	Scarlet Fever	C.	10	—	—	—	—	—	—	—	8	—	1	0	1
		D.	2	—	—	—	—	—	—	—	2	—	0	0	0

Note. Les données sont incomplètes — Data are incomplete.

MAURICE — MAURITIUS

(Population: 387 743. E. 31 déc. 1924).

Sources: Annual Report on the Medical and Health Department, 1921-1924. Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925										
								Jan. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	D.	497	496	318	336	294	28	33	34	30	37	25	27	23	15	18	10	14
Grippe	Influenza	D.	1563	631	556	760	338	60	13	28	27	26	27	40	31	24	25	21	16
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	5	1	3	2	2	0	0	0	0	0	0	2	0	0	0	0	0
		D.	0	0	1	1	2	0	0	0	0	0	0	2	0	0	0	0	0
Peste	Plague	C.	375	98	139	161	74	35	12	0	1	4	0	0	1	1	7	2	11
		D.	297	75	118	144	65	32	9	0	1	4	0	0	0	1	7	1	10
Pneumonie	Pneumonia	D.	1875	1318	1083	1018	626	86	33	43	39	48	53	68	52	61	45	48	50

Autres maladies déclarées: — Other diseases reported:

	Diphtérie Diphtheria		Erysipèle Erysipelas		Fièvre continue Continued Fever	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever		Rougeole Measles	
	C.	D.	C.	D.	C.	C.	C.	D.	C.	D.
1920	24	5	49	11	—	—	168	43	2	—
1921	38	3	47	7	—	18	288	28	303	46
1922	25	1	20	17	—	21	224	20	0	0
1923	47	5	16	9	—	18	150	13	9	0
1924	104	5	14	10	7	17	107	8	7	0

NIGERIA

(Population: 18 070 600. R. 1921.)

Sources: Rapport médical et sanitaire annuel, 1921-1924. — Medical and Sanitary Report, 1921-1924. Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925										
								Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	C.	1323	1577	2050	2176	151	3	10	24	19	14	17	25	14	7	6	7	5
		D.	81	76	103	103	94	1	6	13	3	8	5	9	16	8	8	8	9
Fièvre jaune	Yellow fever	C.	0	2	0	3	20	0	0	0	2	6	4	4	2	1	1	0	0
		D.	0	1	0	3	12	0	0	0	0	4	2	3	1	1	1	0	0
Fièvre récurrente	Relapsing fever	C.	0	—	43	733	1276	42	394	78	101	41	33	38	40	213	28	145	123
		D.	0	—	15	89	314	10	31	161	9	2	1	16	7	67	3	2	5
Fièvre paratyphoïde	Paratyphoid fever	C.	—	—	—	—	10	0	0	1	1	0	2	0	1	0	3	2	0
		D.	—	—	—	—	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre typhoïde	Typhoid fever	C.	—	—	—	15*	6	0	0	0	0	0	2	2	0	1	1	0	0
		D.	—	—	—	1	1	0	0	0	0	0	0	1	0	0	0	0	0
Grippe	Influenza	C.	138	782	1021	1151	568	121	8	4	2	0	0	2	4	0	0	235	192
		D.	3	3	12	16	355	34	5	310	6	0	0	0	0	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	D.	2	—	154	244	1322	12	376	808	65	29	5	4	1	1	1	2	18
Peste	Plague	C.	0	0	5	414	653	8	2	9	9	7	0	21	142	210	147	63	35
		D.	0	0	2	344	491	6	0	6	8	4	2	15	130	140	104	48	28
Pneumonie	Pneumonia	D.	173	116	167	183	385	29	33	25	23	21	30	33	32	27	32	42	58
Variole	Smallpox	C.	1031	—	1222	119	1935	12	409	517	439	161	3	5	15	88	108	136	42
		D.	182	—	189	20	196	1	10	83	29	9	37	21	0	1	5	0	0

* Y compris la fièvre paratyphoïde. — Including paratyphoid fever.

NYASSALAND — NYASALAND

(Population : 1 201 983. R. 2 avril 1921.)

Sources : Rapport médical annuel, 1921-1924. — Annual Medical Report, 1921-1924.
Rapports du Ministère britannique de Santé, 1925 — Reports from the British Ministry of Health, 1925.

Maladie — Disease		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*																	
Coqueluche	Whooping-cough	3	—	13	79	61	11	20	5	12	0	2	2	2	2	1	4	0
Fièvre récurrente	Relapsing fever	24	47	74	82	62	6	7	4	0	6	14	2	0	6	0	9	8
Grippe	Influenza	—	—	3388	753	208	2	8	23	43	8	38	12	15	20	14	8	17
Méningite cérébro-spinale	Cerebro-spinal meningitis	—	—	1	0	2	0	0	0	0	2	0	0	0	0	0	0	0
Peste	Plague	2	0	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Pneumonie	Pneumonia	166	—	85	—	19	0	0	0	0	0	0	0	0	19	0	0	0
Rougeole	Measles	11	—	62	1421	2292	60	1881	251	33	67	0	0	0	0	0	0	0
Tuberculose, toutes formes	Tuberculosis, all forms	28	40	28	45	8	1	2	3	0	2	0	0	0	0	0	0	0
Varicelle	Chickenpox	16	57	24	70	16	2	3	4	0	0	0	0	2	2	0	1	2

	Béribéri Beri-beri	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre hématur. Blackwater fever	Fièvre typhoïde Enteric fever	Lèpre Leprosy	Paludisme Malaria	Pian Yaws	Tétanos Tetanus	Variole Smallpox
1921	8	1	329	14	2	20	1122	238	—	—
1922	4	0	329	14	2	19	1611	387	—	—
1923	10	3	1008	14	4	22	2653	637	3	14
1924	0	1	1021	5	10	—	3461	1776	1	—
1925	—	—	—	—	—	—	—	—	—	—

Les statistiques vitales concernant la population indigène n'existant pas, la fréquence des maladies suivantes n'est pas exactement connue: paludisme, maladie du sommeil, peste, ankylostomiase, fièvre spirillum, pian, variole, rougeole, lèpre, maladies vénériennes et schistomiase. La peste existe à l'état endémique dans le Nyassa septentrional où des cas sporadiques sont signalés périodiquement. Les déclarations de cas de variole sont rares.

In the absence of any vital statistics regarding the native population, there is no exact knowledge as to the prevalence of the following diseases: Malaria, trypanosomiasis, plague, ankylostomiasis, spirillum fever, yaws, smallpox, measles, leprosy, venereal diseases and schistomiasis. Plague is endemic in the North Nyasa district and sporadic outbreaks occur periodically. Reports of outbreaks of smallpox are rare.

OUGANDA — UGANDA

(Population : 3 071 608. R. avril 1921.)

Sources : Annual Medical and Sanitary Report, 1921-1924.
Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc Dec
Méningite cérébro-spin.	Cerebro-spinal meningitis	C.	—	677	207	118	298	26	80	8	8	88	10	21	16	13	7	10	11
		D.	380	471	87	103	134	16	18	5	7	45	4	4	7	6	3	10	9
Peste	Plague	C.	—	1362	938	616	961	29	27	78	57	72	63	116	51	103	153	82	130
		D.	5871	1305	914	535	882	28	27	73	51	69	59	102	47	85	148	75	118
Variole	Smallpox	C.	506	104	97	7	13	0	2	0	0	0	1	0	2	7	1	0	0
		D.	89	12	10	1	4	0	0	0	0	0	0	0	0	4	0	0	0

	Dysenterie Dysentery		Fièvre hématurique Blackwater fever		Fièvre ondulante Undulant fever		Fièvre récurrente Relapsing fever		Fièvres typhoïde et paratyphoïde Enteric fever		Paludisme Malaria		Pneumonie Pneumonia		Rougeole Measles		Trypanosomiase Trypanosomiasis	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
1921	609	30	62	15	—	—	269	5	13	1	8029	25	243	70	72	0	133	13
1922	500	43	83	14	0	0	302	3	10	2	8883	31	255	68	57	0	138	31
1923	528	21	71	17	2	0	283	7	26	2	11394	37	319	81	189	1	131	16
1924	1178	45	70	23	12	0	852	12	11	3	12905	25	551	80	172	0	87	6

PROTECTORAT FRANÇAIS DU MAROC — FRENCH PROTECTORATE OF MOROCCO

(Population: 5 490 000. R. 6. mars 1921.)

Source : Bulletin sanitaire de l'Algérie.

Maladie — Disease		Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*														
Typhus exanthématique	Typhus	66	510	72	176	26	25	59	59	32	3	0	1	3	54

RÉUNION

(Population : 173 822. R. 1. Juil. 1921.)

Sources : Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies.
Compte-rendu des maladies pestilentielles.

Maladie — Disease			Total	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Diphtérie	Diphtheria	C.	10	3	0	2	1	0	0	3	0	0	1	—	—
		D.	3	3	0	0	0	0	0	0	0	0	0	—	—
Dysenterie	Dysentery	D.	100	11	11	—	—	19	9	10	—	15	—	25	—
Fièvre typhoïde	Typhoid fever	C.	21	11	3	1	0	0	0	0	0	0	0	6	—
		D.	7	4	3	0	0	0	0	0	0	0	0	0	—
Lèpre	Leprosy	C.	3	0	0	1	0	0	0	0	1	—	—	1	—
Paludisme	Malaria	D.	197	40	54	††	††	††	0	25	39	—	—	39	—

†† De nombreux décès. — Numerous deaths.
Note. — Les données sont incomplètes. — Data are incomplete.

RHODÉSIE DU NORD — NORTHERN RHODESIA

(Population : 983 539. R. 3 mai 1921.)

Source: Rapports du Ministère britannique de Santé. — Reports from the British Ministry of Health.

Maladie — Disease			Total 1923	Total 1924	Total 1925	1925 Période de quatre semaines se terminant le: — Four-week period ending: Janv. Jan. 26	Fév. Feb. 23	Mars March 23	Avril April 20	Mai May 18	Juin June 15	Juillet July 13	Août Aug. 10	Sept. Sept. 7	Oct. Oct. 5	Nov. Nov. 2	Nov. Nov. 30	Déc. Dec. 28
Diphtérie	Diphtheria	C.	—	—	1	0	0	0	0	0	1	0	0	0	0	0	0	0
		D.	—	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dysenterie	Dysentery	C.	33	58	33	1	1	3	2	1	3	1	0	1	2	1	6	11
		D.	6	6	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Fièvre récurrente	Relapsing fever	C.	42	36	25	2	4	3	2	1	4	1	1	0	0	2	4	1
		D.	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grippe	Influenza	C.	1963	2364	1857	142	121	213	164	181	116	124	163	254	225	58	35	61
		D.	86	223	84	5	5	18	7	7	0	4	6	13	4	4	4	7
Méningite cérébro-spin.	Cerebro-spin. meningitis	C.	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
		D.	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0
Oreillons	Mumps	C.	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
Variole	Smallpox	C.	59	258	98	4	13	8	6	3	0	15	0	6	35	8	0	0
		D.	9	17	2	0	0	0	1	0	0	0	0	0	0	1	0	0

RHODÉSIE DU SUD — SOUTHERN RHODESIA

(Population: 899 187. R. 3 mai 1921.)

Sources: Rapport annuel sur la Santé publique, 1921-1924. — Annual Report on the Public Health, 1921-1924.
Rapports hebdomadaires du Département de la Santé publique, 1925. — Weekly Reports from the Public Health Department, 1925.

Période de quatre semaines se terminant le: Four-week period ending:			Coqueluche Whooping-cough		Diphtérie Diphtheria		Fièvres typhoïde et paratyphoïde Enteric fever		Grippe * Influenza		Méningite cérébro-spinale Cerebro-spinal meningitis		* Oreillons Mumps	Rougeole Measles		Rubéole Germ. measles	Scarlatine Scarlet fever	* Varicelle Chickenpox	Variole * Smallpox	
			C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	C.	D.	C.	C.	C.	C.	D.
Total 1921			6	5	8	3	53	4	1086	69	—	1	3	—	—	40	5	23	515	145
» 1922			—	3	0	0	46	11	1259	19	3	1	0	—	—	3	4	96	501	21
» 1923			48	7	3	3	61	14	47	21	6	2	98	1	0	13	4	84	16	8
» 1924			117	0	1	0	30	4	242	31	4	2	35	28	0	39	4	491	2	0
» 1925			62	1	15	2	21	1	323	32	5	2	56	947	5	46	6	382	16	0
Janvier	28	January	0	0	2	0	3	0	71	2	0	0	0	31	0	0	0	1	0	0
Février	25	February	0	0	1	0	3	1	0	0	0	0	2	20	0	5	0	7	1	0
Mars	25	March	0	0	3	0	1	0	0	0	1	1	7	23	0	8	2	2	4	0
Avril	22	April	0	0	1	1	0	0	0	0	0	0	0	1	0	3	0	1	0	0
Mai	20	May	0	0	0	0	0	0	3	0	0	0	1	18	0	3	0	2	0	0
Juin	17	June	0	0	0	0	0	0	25	0	0	0	13	88	0	0	0	9	1	0
Juillet	15	July	0	0	3	0	2	0	0	0	0	0	2	47	0	0	1	25	1	0
Août	12	August	0	0	2	1	2	0	2	0	1	0	1	111	0	0	0	11	0	0
Septembre	9	September	7	1	0	0	3	0	221	6	1	0	3	30	0	0	1	32	1	0
Octobre	7	October	9	0	0	0	0	0	1	0	0	0	7	85	1	0	1	27	3	0
Novembre	4	November	18	0	0	0	4	0	0	0	1	0	2	12	4	0	1	66	1	0
Décembre	2	December	20	0	2	0	0	0	0	0	0	0	10	365	0	16	0	63	1	0
Décembre	30	December	8	0	1	0	3	0	0	24	1	1	8	116	0	11	0	136	3	0

	Encéphalite léthar. Encephalitis lethar.	Erysipèle Erysipelas	Fièvre ondulante Undulant fever	Herpès tonsurans Ringworm	Poliomyélite aiguë Acute poliomyelitis	Tripanosomiase Tripanosomiasis	
	C.	C.	C.	C.	C.	C.	D.
1922	1	—	12		—	—	1
1923	0	1	12	1	—	1	0
1924	1	4	16	1	0	2	0
1925	4	3	15	8	1	2	1

* Les données sont incomplètes. — The data are incomplete.

SIERRA-LÉONE — SIERRA LEONE

(Population : 1 541 311. R. 24 avril 1921.)

Sources : Annual Medical and Sanitary Report, 1922-1924.
Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease		Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*																
Dysenterie	Dysentery	252	115	475	153	20	5	7	7	18	18	17	16	10	16	10	9
Pneumonie	Pneumonia	193	92	97	77	11	8	5	6	3	3	10	2	4	17	3	5
Varicelle	Chickenpox	76	97	43	66	4	7	8	10	8	4	2	8	2	2	2	9
Variole	Smallpox	44	18	2	8	0	2	1	0	0	0	0	0	0	0	0	5

		1922	1923	1924
Coqueluche — Whooping-cough	c.	35	197	45
Diphtérie — Diphtheria	c.	0	2	0
Fièvre hématurique — Blackwater fever	c.	9	6	7
Méningite cérébro-spinale — Cerebro-spinal meningitis	c.	0	1	0
Paludisme — Malaria	c.	4644	3035	3492
Scarlatine — Scarlet fever	c.	0	1	0

SOUDAN FRANÇAIS — FRENCH SUDAN

(Population: 2 474 580. R. 1 juil. 1921.)

Sources: Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies. Compte-rendu des maladies pestilentielles.

Maladie — Disease			1925 Total	Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	C.	381	0	0	§	0	0	0	0	381	0	0	0	0
Fièvre jaune	Yellow fever	C.	3	0	0	0	0	0	0	0	0	0	0	3	0
		D.	2	0	0	0	0	0	0	0	0	0	0	2	0
Fièvre récurrente	Relapsing fever	C.	183	177	0	0	0	0	0	0	0	5	1	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	13	2	6	0	0	0	0	0	0	4	1	0	0
Rougeole	Measles	C.	78	0	0	0	0	0	0	0	0	0	13	65	—
		D.	4	0	0	0	0	0	0	0	0	0	4	0	0
Trypanosomiase	Trypanosomiasis	C.	1	0	0	0	0	0	1	0	0	0	0	0	0
Variole	Smallpox	C.	327	4	0	0	0	3	0	3	300	0	7	§	10
		D.	100	0	0	0	0	0	0	0	100	0	0	§	0

§ Quelques cas. — A few cases.
Note. Les données sont incomplètes. — Data are incomplete.

SOUDAN ANGLO-ÉGYPTIEN — ANGLO-EGYPTIAN SUDAN

(Population: 6 170 000 E. 1925.)

Cas et décès dus à certaines maladies infectieuses enregistrés par le personnel médical des hôpitaux et dispensaires civils en 1924 et 1925.
Cases of and Deaths from Certain Infectious Diseases reported by the Medical Staff of Civil Hospitals and Dispensaries in 1924 and 1925.

Source: Annual Report of the Sudan Medical Service, 1924-1925.

Maladie — Disease		1924 Cas traités Cases treat.	1924 Décès Deaths	1925 Cas traités Cases treat.	1925 Décès Deaths	Maladie — Disease		1924 Cas traités Cases treat.	1924 Décès Deaths	1925 Cas traités Cases treat.	1925 Décès Deaths
Ankylostomiase	Ankylostomiasis	73	0	32	0	Paludisme	Malaria	3526	28	3679	31
Béribéri	Beri-beri	3	0	0	0	Pérical	Madura-disease	183	2	147	1
Bilharziose	Bilharziasis	158	0	194	0	Pian	Yaws	1	0	686	2
Coqueluche	Whooping-cough	14	0	20	0	Pneumonie	Pneumonia	100	16	118	25
Dengue	Dengue	150	0	4	0	Rougeole	Measles	48	3	102	2
Diphtérie	Diphtheria	20	5	10	0	Tétanos	Tetanus	9	6	7	3
Dysenterie:	Dysentery:	716	22	942	34	Trachome	Trachoma	192	0	139	0
Amibienne	Amboeic	605	15	568	22	Trypanosomiase	Trypanosomiasis	1	0	231	238
Bacillaire	Bacillary	111	7	374	12	Tuberculose:	Tuberculosis:	290	36	321	39
Erysipèle	Erysipelas	5	0	6	0	Pulmonaire	Pulmonary	159	24	159	25
Fièvre de trois jours	Phlebotomus	1	0	17	0	Autres formes	Other forms	131	12	162	14
Fièvre hématurique	Blackwater fever	10	1	15	5	Varicelle	Chickenpox	120	1	359	0
Fièvre méditerran.	Malta fever	11	0	11	3	Variole	Smallpox	6	1	2	0
Fièvre récurrente	Relapsing fever	1	0	8	0	Ver de Guinée	Guinea worm	10	0	72	0
Fièvre typhoïde	Enteric fever	38	13	31	6	Malad. vénériennes:	Venereal diseases				
Filariose	Filariasis	5	0	5	0	Chancre mou	Soft chancre	52	0	47	0
Grippe	Influenza	712	5	493	19	Gonorrhée	Gonorrhœa	793	1	1018	0
Leichmaniose	Leishmaniosis	33	9	89	27	Syphilis	Syphilis	1173	3	1401	4
Lèpre	Leprosy	15	4	26	2						
Méningite cérébro-spinale	Cerebro-spinal meningitis	5	5	11	8						
Oreillons	Mumps	296	0	225	1						

TERRITOIRE DU TANGANYIKA — TANGANYIKA TERRITORY

(Population : 4 109 893. R. 24 avril 1921.)

Sources : Rapports annuels du Ministère des Colonies, 1921-1924. — Annual Reports from the Colonial Office, 1921-1924. Rapports du ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease			Total 1922	Total 1923	Total 1924	Total 1925	1925 Période de quatre semaines se terminant le: — Four-week period ending: Janv. Jan. 24	Févr. Feb. 21	Mars March 21	Avril April 18	Mai May 16	Juin June 13	Juill. July 11	Août Aug. 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Dec. 26	Janv. 3 1926**
Grippe	Influenza	C.	1176	1933	544	735	293	*	0	42	19	0	17	*	284	0	37	0	0	43
		D.	37	291	38	64	12	20	0	0	0	0	0	15	16	0	1	0	0	0
Ménin. cérébro-spinale	Cerebro-spinal mening.	C.	9	101	2	6	0	0	0	0	1	0	0	0	1	3	0	0	1	0
		D.	6	89	1	3	0	0	0	0	0	0	0	0	0	2	0	0	1	0
Peste	Plague	C.	52	39	42	44	28	0	1	2	2	0	6	0	0	2	3	0	0	0
		D.	40	26	35	27	20	0	1	0	0	0	1	0	0	2	3	0	0	0
Variole	Smallpox	C.	390	217	30	1388	0	1	0	35	68	4	49	0	1203	19	7	0	2	0
		D.	46	33	12	466	0	0	0	5	22	0	3	0	429	3	4	0	0	0

Autres maladies déclarées. — Other diseases notified:

	Coqueluche Whooping-cough C.	Dengue C.	Dysenterie Dysentery C.	Fièvre récurrente Relapsing fever C.	Fièvre typhoïde Typhoid fever C.	Oreillons Mumps C.	Rougeole Measles C.	Tétanos Tetanus C.	Tuberculose, toutes formes Tuberculosis, all forms C.	D.
1922	22	0	369	44	18	54	62	9	206	23
1923	41	9	293	119	21	92	17	5	271	50
1924	28	30	577	148	9	165	27	10	333	70

* Le nombre des cas n'est pas connu. — Number of cases unknown.
** Une semaine seulement. — One week only.

TOGO (Territoire sous mandat français) — TOGO (French Mandated Territory)

(Population: 730 807. R. 1er juil. 1921.)

Sources: Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies. Compte-rendu des maladies pestilentielles.

Maladie — Disease		1925											
		Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*												
Diphtérie	Diphtheria	2	—	—	—	—	—	—	—	—	—	—	—
Dysenterie	Dysentery	—	—	—	—	—	—	—	111	—	—	—	—
Fièvre typhoïde	Typhoid fever	—	—	4	—	—	—	—	—	—	—	—	—
Lèpre	Leprosy	—	—	—	—	—	—	—	369	—	—	—	—
Paludisme	Malaria	§	§	—	—	—	—	§§	—	—	§	§§	—
Peste	Plague	—	—	—	—	—	—	—	176	—	—	—	—
Variole	Smallpox	2	0	1	0	0	0	0	0	—	§	§	—

§ Quelques cas. — Few cases.
§§ Nombreux cas. — Numerous cases.
Note. Les données sont incomplètes. — Data are incomplete.

TRIPOLITAINE — TRIPOLITANIA

(Population : 550 000. E. 1921.)

Source : Bollettino delle Malattie Infettive nel Regno.

Maladie — Disease		Total 1924	Total 1925	1925												
				Janv. Jan. 3-23	24 janv. 20 fév.	21 févr. 20 mars	21 mars 30 avril	Mai May	Juin June	Juil. July 1-15	16 juil. 15 août	Août Aug. 16-31	Sept. Sept.	Oct. Oct.	Nov Nov.	Déc. Dec.
Cas	*Cases*															
Diphtérie	Diphtheria	6	6	0	1	0	1	0	1	0	0	1	1	0	1	0
Dysenterie	Dysentery	3	6	0	0	0	0	0	3	0	0	0	2	0	1	0
Fièvres typhoïde et paratyphoïde	Enteric fever	114	149	5	1	3	3	10	23	12	16	4	28	30	9	5
Méningite cérébro-spinale	Cerebro-spinal meningitis	8	9	1	0	0	0	0	7	0	0	0	0	0	0	1
Poliomyélite aiguë	Acute poliomyelitis	—	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Rougeole	Measles	78	144	40	20	6	0	0	7	1	6	1	6	13	13	31
Scarlatine	Scarlet fever	3	2	0	0	0	1	0	1	0	0	0	0	0	0	0
Varicelle	Chickenpox	—	68	0	16	17	24	7	2	0	0	0	0	0	0	2
Variole	Smallpox	63	52	0	6	1	7	0	4	0	3	0	6	0	6	19

TUNISIE — TUNISIA

(Population: 2 074 301. R. 6 mars 1921.)

Source: Information sanitaire.

Maladie — Disease		Total 1923	Total 1924	Total 1925	1925											
					Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*															
Coqueluche	Whooping-cough	5	16	50	2	2	3	4	0	5	1	0	0	30	3	0
Diphtérie	Diphtheria	203	282	288	17	35	21	25	14	7	18	24	32	38	35	22
Dysenterie	Dysentery	78	108	69	3	1	1	2	2	2	5	6	11	14	15	7
Encéphalite léthargique	Encephalitis lethargica	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre méditerranéenne	Mediterranean fever	69	81	46	2	2	6	6	7	5	5	5	3	2	2	1
Fièvre récur.	Relapsing fever	2	1	6	0	0	0	0	1	2	1	2	0	0	0	0
Fièvres typh. et paratyph.	Enteric fever	655	821	437	28	28	10	14	16	22	36	58	66	49	65	45
Lèpre	Leprosy			3	0	0	0	0	0	1	0	0	1	0	0	1
Méningite cérébro-spinale	Cerebro-spinal meningitis	21	11	2	0	0	0	0	0	1	0	0	0	0	1	0
Oreillons	Mumps	33	148	69	6	33	5	3	1	7	0	0	0	0	9	5
Paludisme	Malaria	62	44	1	0	0	0	0	0	1	0	0	0	0	0	0
Peste	Plague	31	11	6	0	0	0	0	0	0	2	3	0	1	0	0
Poliomyélite aiguë	Acute poliomyelitis	0	1	2	0	0	0	0	0	0	0	0	0	2	0	0
Rougeole	Measles	442	221	162	15	16	42	40	23	12	9	0	0	1	3	1
Scarlatine	Scarlet fever	37	66	278	4	11	17	42	45	39	19	16	14	18	32	21
Teigne	Favus	6	3	15	1	0	1	0	0	0	0	0	0	1	12	0
Trachome	Trachoma	14	102	25	24	0	0	1	0	0	0	0	0	0	0	0
Tuberculose	Tuberculosis	359	469	472	21	46	44	46	33	59	34	34	50	31	41	33
Typhus exant.	Typhus	357	209	404	6	4	44	50	139	89	28	34	5	2	2	1
Variole	Smallpox	279	606	1270	135	156	206	129	70	81	25	64	75	81	79	169

UNION DE L'AFRIQUE DU SUD — UNION OF SOUTH AFRICA

(Population: 7 466 436. E. 31 déc. 1925 *.)

Sources: Rapports annuels du Département de la Santé publique, 1921-1924.
Rapports mensuels, 1925.
Annual Reports of the Health Department, 1921-1924. Monthly Reports, 1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Peste	Plague	C.	33	11	27	400	70	28	20	11	1	0	1	2	3	0	0	2	2
		D.	16	8	19	246	40	16	12	7	0	0	1	2	0	0	0	1	1
Typhus exanth.	Typhus	C.	9157	8531	2923	1570	1114	96	75	41	49	92	66	163	242	71	95	46	18
		D.	1140	1031	437	257	129	12	5	7	0	12	4	34	26	12	7	1	9
Variole	Smallpox	C.	1108	713	285	346	71	4	6	9	17	9	1	8	5	8	3	0	1
		D.	19	23	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0

Déclaration de maladies contagieuses (Blancs et indigènes) par les médecins.
Notification of Infectious Diseases (Whites and Natives) by Medical Practitioners.

Maladie – Disease		Total 1920	Total 1921	Total 1 janv. 30 juin Jan. 1st June 30 1922	Total 1 juil. 1922 30 juin 1923 July 1 1922 June 30 1923	Total 1 juil. 1923 30 juin 1924 July 1 1923 June 30 1924	Total 1 juil. 1924 30 juin 1925 July 1 1924 June 30 1925	1921 B. W.	1921 I. N.	1922 1 janv.–30 juin Jan. 1– June 30 B. W.	1922 1 janv.–30 juin Jan. 1– June 30 I. N.	1er juillet 1922 30 juin 1923 July 1st 1922 June 30th 1923 B. W.	1er juillet 1922 30 juin 1923 July 1st 1922 June 30th 1923 I. N.	1er juillet 1923 30 juin 1924 July 1st 1923 June 30th 1924 B. W.	1er juillet 1923 30 juin 1924 July 1st 1923 June 30th 1924 I. N.	1er juillet 1924 30 juin 1925 July 1st 1924 June 30th 1925 B. W.	1er juillet 1924 30 juin 1925 July 1st 1924 June 30th 1925 I. N.
Cas	*Cases*																
Anthrax	Anthrax	75	110	46	50	35	49	17	93	13	33	11	39	13	22	11	38
Diphtérie	Diphtheria	1016	1014	540	885	1037	1201	847	167	459	81	771	114	861	176	1039	162
Encéphalite infectieuse	Infective Encephalitis	25	33	6	13	13	44	12	21	4	2	4	9	6	7	17	27
Erysipèle	Erysipelas	190	167	79	194	188	167	118	49	59	20	142	52	122	66	114	53
Fièvre de Malte	Malta fever	37	27	25	27	18	15	20	7	24	1	16	11	11	7	9	6
Fièvre puerpérale y compris septicémie puerp.	Puerperal fever including puerperal sepsis	195	134	64	136	128	155	92	42	33	31	87	49	63	65	89	66
Fièvre typh.	Enteric fever	5292	4511	2623	4163	3859	4390	2713	1798	1514	1109	2424	1739	2037	1822	2291	2099
Lèpre	Leprosy	115	108	45	87	53	58	16	92	2	43	2	85	7	46	6	52
Méningite cérébro-spinale	Cerebro-spinal meningitis	128	113	58	515	826	552	23	90	7	51	107	408	151	675	154	398
Morve	Glanders	1	0	0	0	1	2	0	0	0	0	0	0	0	1	2	0
Ophtalmie gonorrhéique des nouv.-nés	Gonorrhœal ophthalmia neonatorum	10	22	3	12	14	16	18	4	1	2	7	5	6	8	11	5
		52	98	41	82	87	132	57	41	12	29	51	31	47	40	48	84
Peste	Plague	6	33	6	2	8	79	7	26	0	6	0	2	0	8	23	56
Poliomyélite aiguë	Acute poliomyelitis	33	33	18	5	3	21	27	6	14	4	2	3	0	3	15	6
Rage humaine	Rabies	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
Scarlatine	Scarlet fever	1732	920	640	2042	1024	879	854	66	628	12	2000	42	984	40	853	26
Tuberculose	Tuberculosis	3313	2962	1297	3612	3942	4634	439	2523	174	1123	400	3212	427	3515	738	3896
Typhus exanth.	Typhus	6992	6257	1851	3762	1230	814	97	6160	33	1818	56	3706	55	1175	57	757
Variole	Smallpox	1035	787	269	285	246	108	71	716	83	186	19	266	60	186	8	100

* Blancs — White = 1 652 382 ; Indigènes — Native = 5 074 973 ; Asiatiques — Asiatic = 173 339 ; Metis—Coloured = 565 742.
B. = Blancs; I. = Indigènes. — W. = Whites; N. = Natives.

ZANZIBAR

(Population: 217 960. R. 1er avril 1923.)

Source: Annual Report of the Medical Department, 1924.

Maladie — Disease			1919	1920	1921	1922	1923	1924	1925
Dysenterie	Dysentery	C.	—	—	—	55	24	19	—
		D.	14	9	1	1	0	1	—
Fièvre hématurique	Blackwater fever	C.	—	—	—	9	6	4	—
		D.	—	3	3	1	2	2	—
Grippe	Influenza	C.	—	—	—	571	290	138	—
		D.	13	1	0	5	—	4	—
Lèpre	Leprosy	C.	—	—	—	—	31	41	—
		D.	12	7	12	8	—	—	—
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	—	—	—	3	2	0	—
		D.	—	1	0	3	1	0	—
Pneumonie	Pneumonia	C.	—	—	—	—	101	39	—
		D.	—	25	24	46	11	12	—
Tétanos	Tetanus	C.	—	—	—	—	—	1	—
		D.	1	2	2	1	0	1	—
Variole	Smallpox	C.	4	7	160	177	236	10	1
		D.	1	1	56	54	60	1	0

AMÉRIQUE — AMERICA

CANADA

Sources: Rapports du Bureau Fédéral de la Statistique, Ottawa, Canada, 1924 et 1925.
Reports from the Dominion Bureau of Statistics, Ottawa, Canada, 1924 and 1925.

Maladie — Disease			Total 1924	Total 1925	Jan. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
CANADA (Total) (Population: 9.265.000.** E. 1925).																
Coqueluche	Whooping-cough	C.	6414	7380	756	695	719	526	729	569	675	655	646	510	494	406
		D.	663	537	43	48	56	53	50	36	38	44	45	38	39	47
Diphtérie	Diphtheria	C.	9068	7327	822	715	604	484	494	401	336	497	520	867	773	764
		D.	977	908	131	94	98	71	67	44	53	46	68	83	56	97
Fièvre typhoïde	Typhoid fever	C.	2229	1985	132	83	152	84	126	101	115	278	320	298	174	122
		D.	445	412	44	23	41	41	24	21	27	26	43	53	37	32
Grippe	Influenza	D.	730	1589	137	135	330	293	216	122	60	23	33	51	74	115
Méningite cérébro-spinale	Cerebro-spinal meningitis	D.	175	164	15	23	13	18	15	9	13	7	16	16	9	10
Oreillons [1]	Mumps [1]	C.	8192	8364	1358	1237	1475	943	619	418	236	98	109	355	786	731
		D.	7	1	0	0	0	0	0	0	0	0	0	0	1	0
Pneumonie [2]	Pneumonia [2]	D.	3218	3897	430	428	481	429	425	275	211	133	164	294	308	319
Poliomyélite aiguë	Acute poliomye-litis	C.	217	167	5	9	2	1	6	2	12	34	56	33	5	2
		D.	36	41	1	5	5	1	5	1	3	2	7	6	3	2
Rougeole	Measles	C.	39984	23435	2859	2397	2502	2814	3376	2149	1204	394	207	937	2025	2571
		D.	368	211	32	15	26	15	25	33	12	13	3	9	9	19
Scarlatine	Scarlet fever	C.	17340	14148	1729	1743	1792	1376	1249	936	618	441	585	1017	1314	1348
		D.	393	355	43	40	46	43	38	13	17	13	13	36	24	29
Tuberculose, toutes formes	Tuberculosis, all forms	D.	4726	5090	474	398	557	476	483	392	496	363	347	397	334	373
Variole	Smallpox	C.	2791	1248	206	218	200	86	97	63	45	114	41	46	54	78
		D.	57	10	0	1	1	0	1	2	0	2	0	0	3	0
NOUVEAU-BRUNSWICK et NOUVELLE-ÉCOSSE — NEW BRUNSWICK and NOVA SCOTIA (Population: 940.000. E. 1925)																
Coqueluche	Whooping-cough	C.	763	378	52	33	27	62	35	33	30	17	8	10	41	30
		D.	47	27	4	3	0	5	2	4	2	2	2	1	1	1
Diphtérie	Diphtheria	C.	419	458	32	19	30	36	31	25	21	30	42	60	58	74
		D.	45	32	3	4	2	3	2	1	3	1	2	5	2	4
Fièvre typhoïde	Typhoid fever	C.	313	222	13	1	14	8	12	19	16	33	52	35	13	6
		D.	23	35	0	1	2	2	1	2	4	1	9	8	5	0
Grippe	Influenza	D.	41	156	6	18	39	38	24	11	13	0	2	2	0	3
Méningite cérébro-spinale	Cerebro-spinal meningitis	D.	7	11	2	4	2	0	0	0	1	0	0	1	0	1
Oreillons	Mumps	C.	242	238	24	26	13	26	22	2	9	0	20	37	28	31
		D.	2	1	0	0	0	0	0	0	0	0	0	0	1	0
Pneumonie [2]	Pneumonia [2]	D.	330	479	55	54	87	68	45	32	28	12	16	17	28	37
Poliomyélite aiguë	Acute poliomye-litis	C.	40	7	0	1	0	0	0	1	0	0	2	0	0	0
		D.	2	1	0	0	0	0	0	0	0	1	0	0	0	0
Rougeole	Measles	C.	1498	290	45	16	6	15	16	29	77	8	5	16	12	45
		D.	23	5	0	0	1	0	0	1	1	0	0	0	0	2
Scarlatine	Scarlet fever	C.	1299	891	111	68	78	52	59	72	58	23	85	83	99	103
		D.	31	23	1	1	3	4	5	0	0	1	4	0	2	2
Tuberculose toutes formes,	Tuberculosis, all forms	D.	368	540	47	46	66	45	58	47	60	31	38	29	37	36
Variole	Smallpox	C.	50	4	0	1	0	0	1	1	0	0	0	0	0	1
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QUÉBEC (Population: 2.520.000. E. 1925).																
Coqueluche	Whooping-cough	C.	1168	962	62	93	81	111	59	43	45	69	86	66	101	146
		D.	449	289	24	30	31	27	25	15	20	20	29	17	22	29
Diphtérie	Diphtheria	C.	1380	1575	187	158	138	133	103	88	67	83	76	202	168	172
		D.	397	346	50	36	46	26	27	15	19	11	24	40	23	29
Fièvre typhoïde	Typhoid fever	C.	759	465	54	19	46	44	42	9	21	61	42	60	46	21
		D.	286	229	27	13	26	31	12	15	16	15	16	29	15	14
Grippe	Influenza	D.	515	771	65	63	174	130	89	67	9	8	15	29	49	73
Méningite cérébro-spinale	Cerebro-spinal meningitis	D.	52	37	3	3	3	4	3	2	4	1	4	2	4	4
Poliomyélite aiguë	Acute poliomye-litis	C.	4	21	2	1	1	1	0	0	2	2	3	8	1	0
		D.	18	20	1	2	4	1	3	0	2	0	5	1	0	1
Rougeole	Measles	C.	5066	4351	519	423	640	1088	794	376	76	23	16	46	134	216
		D.	204	156	25	8	17	13	20	27	8	8	3	6	8	13
Scarlatine	Scarlet fever	C.	3137	3352	406	363	435	453	320	217	121	83	104	221	323	306
		D.	167	165	17	17	27	18	17	9	7	4	3	26	13	7
Tuberculose, toutes formes	Tuberculosis, all forms	D.	2725	2714	227	188	343	258	242	192	246	220	189	216	176	217
Variole	Smallpox	C.	173	83	0	0	0	0	0	1	1	72	0	0	1	8
		D.	2	1	0	0	0	0	0	0	0	0	0	0	1	0

** A l'exclusion de l'Ile du Prince-Edouard, dont on ne possède pas de chiffres. — Exclusive of Prince Edward Island, for which no information is available.
[1] Le nombre des cas d'oreillons dans la province de Québec n'est pas donné. — The number of mumps cases in the province of Quebec is not available.
[2] Le nombre des décès dus à la pneumonie dans les provinces du Nouveau-Brunswick, de Québec et de la Colombie Britannique n'est pas donné. — The number of deaths from pneumonia for New Brunswick, Quebec and British Columbia is not available.

CANADA *(suite — continued)*.

Maladie — Disease			Total 1924	Total 1925	1925 Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
ONTARIO (Population: 3 103 000. E.1925).																
Coqueluche	Whooping-cough	C.	2474	3728	489	427	464	244	400	269	345	305	295	247	130	113
		D.	56	97	6	8	13	10	11	7	9	10	7	6	3	7
Diphtérie	Diphtheria	C.	3475	3053	355	285	272	182	194	142	151	244	271	412	279	266
		D.	271	208	34	17	17	15	10	12	19	10	16	14	19	25
Fièvre typhoïde	Typhoid fever	C.	849	856	53	40	72	25	53	46	57	111	130	137	76	56
		D.	81	70	9	3	8	3	9	3	3	5	8	5	10	4
Grippe	Influenza	D.	109	252	33	24	55	43	28	7	5	2	10	11	14	20
Méningite cérébro-spinale	Cerebro-spinal meningitis	D.	55	32	5	4	3	3	3	2	4	1	1	5	1	0
Oreillons	Mumps	C.	7632	6170	1257	1112	1281	857	478	300	108	43	29	103	306	296
		D.	6	0	0	0	0	0	0	0	0	0	0	0	0	0
Pneumonie	Pneumonia	D.	1858	1866	250	241	220	177	168	126	77	37	85	165	177	143
Poliomyélite aiguë	Acute poliomye-litis	C.	64	92	2	4	1	0	5	0	4	19	37	17	3	0
		D.	6	6	0	3	1	0	2	0	0	0	0	0	0	0
Rougeole	Measles	C.	25694	12501	2101	1589	1690	1530	2173	1085	648	168	60	405	534	518
		D.	65	16	0	4	7	0	3	2	0	0	0	0	0	0
Scarlatine	Scarlet fever	C.	7332	5371	700	621	681	525	507	326	252	141	162	384	514	558
		D.	118	79	14	10	8	7	6	1	3	2	5	6	4	13
Tuberculose, toutes formes	Tuberculosis, all forms	D.	978	911	112	88	80	63	92	85	82	44	62	66	75	62
Variole	Smallpox	C.	594	214	27	13	16	9	16	11	8	7	25	19	31	32
		D.	47	3	0	1	0	0	1	1	0	0	0	0	0	0
MANITOBA, SASKATCHEWAN et ALBERTA — MANITOBA, SASKATCHEWAN and ALBERTA (Population: 2 141 000. E.1925).																
Coqueluche	Whooping-cough	C.	1894	1839	142	114	108	75	149	140	202	221	220	173	188	107
		D.	102	121	9	7	12	11	12	9	6	12	6	14	13	10
Diphtérie	Diphtheria	C.	3152	1929	222	219	146	115	129	120	123	125	124	166	210	230
		D.	243	298	43	36	30	27	26	16	10	18	25	20	10	37
Fièvre typhoïde	Typhoid fever	C.	256	347	11	19	18	3	16	22	16	50	74	48	37	33
		D.	54	78	8	6	5	5	2	1	4	5	10	11	7	14
Grippe	Influenza	D.	65	410	33	30	62	82	75	37	32	13	6	9	11	19
Méningite cérébro-spinale	Cerebro-spinal meningitis	D.	61	83	5	12	5	10	9	5	4	5	11	8	4	5
Oreillons	Mumps	C.	269	1203	45	53	132	36	75	70	104	45	24	104	241	274
		D.	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Pneumonie	Pneumonia	D.	1030	1552	125	133	174	184	212	117	106	84	63	112	103	139
Poliomyélite aiguë	Acute poliomye-litis	C.	104	44	1	0	0	0	0	1	6	12	14	8	0	2
		D.	9	13	0	0	0	0	0	1	1	0	2	5	3	1
Rougeole	Measles	C.	6254	6224	190	357	159	178	391	653	398	192	125	468	1327	1786
		D.	66	34	7	3	1	2	2	3	3	5	0	3	1	4
Scarlatine	Scarlet fever	C.	4034	3336	304	511	468	240	259	258	155	152	169	253	265	302
		D.	68	87	11	12	8	14	10	3	7	6	1	4	4	7
Tuberculose, toutes formes	Tuberculosis, all forms	D.	631	866	80	63	56	99	80	68	105	68	58	86	45	58
Variole	Smallpox	C.	1242	330	43	34	20	10	52	34	20	20	14	25	22	36
		D.	7	4	0	0	0	0	0	1	0	1	0	0	2	0
COLOMBIE BRITANNIQUE — BRITISH COLUMBIA (Population: 561 000. E.1925).																
Coqueluche	Whooping-cough	C.	115	473	11	28	39	34	86	84	53	43	37	14	34	10
		D.	9	3	0	0	0	0	0	1	1	0	1	0	0	0
Diphtérie	Diphtheria	C.	642	312	26	34	18	18	37	26	24	15	7	27	58	22
		D.	21	24	1	1	3	0	2	0	2	6	1	4	2	2
Fièvre typhoïde	Typhoid fever	C.	52	95	1	4	2	4	3	5	5	23	22	18	2	6
		D.	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Grippe	Influenza	D.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	D.	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Oreillons	Mumps	C.	49	753	32	46	49	24	44	46	15	10	35	111	211	130
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poliomyélite aiguë	Acute poliomye-litis	C.	5	3	0	0	0	0	1	0	0	1	0	0	1	0
		D.	1	1	0	0	0	0	0	0	0	1	0	0	0	0
Rougeole	Measles	C.	1463	69	4	12	7	3	2	6	5	3	1	2	18	6
		D.	10	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	C.	1538	1198	208	180	130	106	104	63	32	42	65	76	113	79
		D.	9	1	0	0	0	0	0	0	0	0	0	0	1	0
Tuberculose, toutes formes	Tuberculosis, all forms	D.	24	59	8	13	12	11	11	0	3	0	0	0	1	0
Variole	Smallpox	C.	732	617	136	170	164	67	28	16	16	15	2	2	0	1
		D.	1	2	0	0	1	0	0	0	0	1	0	0	0	0

ONTARIO: Données pour les années précédentes: — ONTARIO: Data for previous years:

	Coqueluche Whooping-cough		Diphtérie Diphtheria		Fièvre typhoïde Typhoid fever		Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis		Poliomyélite Poliomyelitis		Rougeole Measles		Scarlatine Scarlet fever		Variole Smallpox	
	C.	D.	C.	D.	C.	D.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
1920	2042	210	5940	654	713	182	2411	77	67	37	14	15423	210	5130	150	5639	33
1921	2307	131	6313	525	725	184	159	79	66	81	20	2851	40	4564	126	3777	18
1922	1691	90	3529	410	576	127	375	71	64	205	25	8950	40	3950	111	977	6
1923	3205	181	2935	244	1665	212	874	64	59	19	10	10843	70	5011	131	335	0

CHILI — CHILE

(Population: 3 819 096. E. sept. 1922.)

Source: Rapport de la Direction générale de la Santé publique. — Report from the Director-General of Public Health.

Maladie — Disease			Total 1925	1925											
				Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Diphtérie	Diphtheria	C.	111	6	9	0	10	5	21	10	11	11	11	9	8
		D.	4	0	1	0	0	0	0	0	3	0	0	0	0
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	1396	164	115	139	146	131	116	97	113	87	85	98	105
		D.	147	11	13	15	8	7	12	16	14	14	14	10	13
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	C.	17	4	1	0	0	2	0	0	3	0	1	5	1
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0
Trachome	Trachoma	C.	84	11	15	25	14	8	0	0	0	7	3	0	1
Typhus exanth.	Typhus	C.	965	90	46	53	47	44	37	57	68	104	152	152	115
		D.	133	12	7	12	3	6	13	6	7	11	20	23	13
Variole	Smallpox	C.	1	0	0	0	0	0	0	1	0	0	0	0	0
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0

			1919	1920	1921	1922	1923	1924	1925
Typhus exanth.	Typhus	C.	14517	7138	4503	4469	3294	2047	965
		D.	2804	1182	569	903	642	330	133
Variole	Smallpox	C.	9	15	11701	8494	3502	410	1
		D.	6	13	5131	3621	1551	126	0

COSTA-RICA

(Population: 485 000 E. 31 déc. 1922.)

Source: Rapport du Service statistique. — Report from Statistical Department.

Maladie — Disease [1]		1925												
		Total	Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*													
Coqueluche	Whooping-cough	13	0	0	0	0	0	0	0	0	0	0	8	5
Diphtérie	Diphtheria	16	0	0	0	2	0	3	3	1	0	0	3	4
Dysenterie	Dysentery	2	0	0	0	0	0	0	0	0	0	0	0	2
Encéphalite léth.	Encephalitis letharg.	1	0	0	0	0	0	0	0	0	0	1	0	0
Fièvres typhoïde et paratyphoïde	Enteric fever	25	0	0	0	4	0	2	1	6	2	2	4	4
Grippe	Influenza	2	0	0	0	0	0	0	0	0	1	0	1	0
Paludisme	Malaria	3	0	0	0	0	0	0	0	0	0	1	2	0
Rougeole	Measles	3	0	0	0	0	1	0	2	0	0	0	0	0
Scarlatine	Scarlet fever	1	0	0	0	0	0	0	0	0	0	0	0	1
Tuberculose	Tuberculosis	16	0	0	0	0	0	0	0	0	0	0	3	13
Variole	Smallpox	4	0	0	0	0	1	1	1	0	0	0	0	1

[1] La déclaration des maladies infectieuses, bien qu'étant obligatoire depuis un certain nombre d'années, n'est devenue effective qu'au cours des derniers mois de 1925; cependant les chiffres indiqués demeurent incomplets. — The declaration of infectious diseases, although it has been obligatory for many years, was only actually put in force — and even then with marked incompleteness — during the last months of 1925.

CUBA

(Population: 3 296 000. E. 1er juil. 1925.)

Cas de maladies à déclaration obligatoire notifiés en 1919-1925; par décades en 1925.
Cases of Notifiable Diseases reported, 1919-1925; by ten-day periods in 1925.

Sources: Boletin Decenal Epidemiólogico Sanitario. Rapports du Ministère de la Santé publique. — Reports from Ministr of Public Health.

Décade se terminant le: / Ten-day period ending:		Diphtérie Diphtheria	Fièvre paratyphoïde Paratyphoid fever	Fièvre typhoïde Typhoid fever	Méningite cérébro-spinale Cerebro-spinal meningitis	Paludisme Malaria	Poliomyélite aiguë Acute poliomyelitis	Rougeole Measles	Scarlatine Scarlet fever	Tétanos infantile Infantile tetanus	Varicelle Chickenpox	Variole Smallpox
Total 1919		—	2347		—	4368	—	—	—	—	—	54
» 1920		—	2190		—	4231	—	—	—	—	—	817
» 1921		—	9592		—	7356	—	—	—	—	—	7339
» 1922		—	2773		—	5739	—	—	—	—	—	1086
» 1923		315	3001		6	4968	—	92	72	19	800	13
» 1924		288	243	2879	12	4400	—	421	49	12	719	0
» 1925		364	234	1789	22	7498	14	3063	195	24	353	2
Janvier — January	10	9	0	32	0	187	0	19	1	0	2	0
	20	9	2	41	0	219	0	9	0	0	2	0
	31	9	2	42	0	336	0	18	1	1	13	0
Février — February	10	11	0	30	1	330	0	23	7	1	4	0
	20	13	4	48	0	262	10	46	2	0	3	1
	28	9	2	28	0	284	0	37	3	0	3	0
Mars — March	10	11	0	40	7	215	1	71	4	0	16	0
	20	5	3	33	0	219	3	79	5	0	54	0
	31	12	3	48	0	223	0	88	7	1	19	0
Avril — April	10	7	4	39	1	80	0	41	3	1	8	0
	20	13	2	47	1	166	0	107	2	1	20	1
	30	14	1	43	1	130	0	134	3	0	18	0
Mai — May	10	8	10	47	2	134	0	118	3	0	16	0
	20	10	7	70	2	124	0	121	5	0	12	0
	31	8	16	50	1	141	0	80	5	0	9	0
Juin — June	10	8	5	60	1	196	0	130	13	1	16	0
	20	4	7	59	1	275	0	94	9	1	10	0
	30	8	7	69	2	315	0	121	8	0	9	0
Juillet — July	10	9	10	117	0	384	0	156	7	0	0	0
	20	8	20	119	1	314	0	72	5	2	4	0
	31	10	9	117	0	436	0	100	22	1	2	0
Août — August	10	15	6	86	0	187	0	87	5	1	8	0
	20	9	12	75	0	240	0	131	4	2	5	0
	31	11	25	70	0	166	0	165	3	1	2	0
Septembre — September	10	12	8	69	0	200	0	125	9	0	2	0
	20	7	6	48	0	125	0	114	5	0	1	0
	30	18	9	43	0	106	0	86	5	2	5	0
Octobre — October	10	5	3	32	0	97	0	83	7	2	3	0
	20	10	7	34	0	213	0	50	6	0	2	0
	31	12	13	23	0	158	0	83	3	1	11	0
Novembre — November	10	14	2	28	0	168	0	86	12	1	4	0
	20	12	12	36	0	188	0	87	4	1	4	0
	30	14	3	22	0	144	0	81	5	0	5	0
Décembre — December	10	14	6	18	1	223	0	57	4	1	16	0
	20	9	4	8	0	128	0	87	2	0	7	0
	31	7	4	18	0	185	0	77	6	2	38	0

ÉQUATEUR — ECUADOR

(Population : 2 000 000. E. 1922.)

Sources : Informe del Director-general de Sanitad Publica, 1921-1922. — Boletin Sanitario, 1923-1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc Dec.
Peste	Plague	C.	270*	56*	126	148	124	17	34	16	8	1	1	0	0	5	11	10	21
		D.	95*	19*	42	47	54	7	13	8	4	2	1	0	0	2	5	6	6
Variole	Smallpox	C.	—	58*	158	9	1	1	0	0	0	0	0	0	0	0	0	0	0
		D.	—	0*	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0

* Pour la ville de Guayaquil seulement. — For the city of Guayaquil only.

Cas de maladies contagieuses déclarés en 1925, par Etats. — Cases of Certain Communicable Diseases Reported in 1925, by States.

Source: INFORMATION REÇUE DU SERVICE DE LA SANTÉ PUBLIQUE DES ETATS-UNIS. — INFORMATION RECEIVED FROM THE UNITED STATES PUBLIC HEALTH SERVICE.

Etat / State		Population estimée au 1er juillet 1925 / Estimated population July 1st, 1925	Charbon / Anthrax	Méningite cérébro-spinale / Cerebro-spinal meningitis	Varicelle / Chickenpox	Dengue / Dengue	Diphtérie / Diphtheria	Encéphalite léthargique / Encephalitis lethargica	Grippe / Influenza	Lèpre / Leprosy	Paludisme / Malaria	Rougeole / Measles	Oreillons / Mumps	Pellagre / Pellagra	Pneumonie, toutes formes / Pneumonia, all forms	Poliomyélite aiguë / Acute Poliomyelitis	Rage animale / Rabies in animals	Rage humaine / Rabies in man	Fièvre des Mont. Roch.** / Rocky Mtn. spotted fever	Scarlatine / Scarlet fever	Angine septique / Septic sore throat	Variole / Smallpox	Trachome / Trachoma	Tuberculose (toutes formes) / Tuberculosis (all forms)	Tuberculose pulmonaire / Pulmonary Tuberculosis	Fièvre typhoïde / Typhoid fever	Typhus exanthématique / Typhus fever	Coqueluche / Whooping-cough
Alabama	Alabama	2,467,190	—	65	1,423	97	1,296	17	9,976	—	3,302	666	1,709	1,148	4,238	75	—	—	—	1,196	—	4,288	—	3,833	—	2,345	53	1,302
Arizona	Arizona	407,702	—	3	284	—	127	2	239	1	1	1,409	523	—	—	37	—	—	3	383	—	117	93	937	—	261	1	217
Arkansas	Arkansas	1,852,905	—	26	838	4	321	—	5,858	—	3,944	778	987	706	—	10	—	—	—	368	—	251	84	566	566	1,367	—	716
Californie	California	4,021,320	5	111	10,851	—	5,587	114	2,636	23	77	2,400	9,990	65	3,190	805	353	2	4	5,733	—	4,919	216	9,682	9,392	854	—	10,469
Colorado	Colorado	1,019,286	2	4	1,991	—	1,318	3	146	—	—	276	2,335	—	272	23	—	—	2	1,278	9	18	10	2,044	—	418	—	1,032
Connecticut	Connecticut	1,531,255	4	35	2,501	—	1,712	40	—	—	22	5,544	1,094	—	3,035	50	32	—	—	4,005	134	4	11	1,512	1,354	265	1	3,743
Delaware	Delaware	234,720	4	2	95	—	204	—	88	—	17	202	102	—	362	4	—	—	—	155	—	9	—	443	405	126	—	120
District de Colombie	District of Columbia	497,906	—	4	776	—	685	13	—	—	—	793	—	3	1,269	22	82	—	—	1,011	—	59	—	1,238	1,188	126	—	745
Floride	Florida	1,090,754	—	16	382	20	753	11	761	5	676	127	1,475	145	1,148	59	155	3	—	179	—	207	1	1,503	—	720	2	493
Géorgie	Georgia	3,058,260	—	38	1,127	36	943	5	11,996	1	2,452	548	1,905	401	2,755	30	—	2	—	328	449	444	20	1,210	1,184	2,016	33	1,458
Idaho	Idaho	492,071	—	—	345	—	416	—	—	—	—	165	125	—	—	10	—	1	3	285	3	526	—	—	—	98	—	392
Illinois	Illinois	6,964,950	4	106	11,195	—	5,004	112	2,981	6	112	28,211	7,076	6	15,215	262	—	1	—	15,688	82	1,625	50	13,999	13,647	2,103	—	11,074
Indiana	Indiana	3,060,416	1	30	3,470	—	1,985	—	3,595	—	—	4,093	181	—	—	58	—	—	—	7,157	—	2,996	—	—	—	1,029	—	2,082
Iowa *	Iowa *	2,505,569	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kansas	Kansas	1,813,621	—	53	3,813	—	1,101	11	963	—	14	450	7,578	17	1,927	122	142	3	1	3,369	11	311	9	2,440	2,110	812	—	2,789
Kentucky	Kentucky	2,488,423	—	—	499	—	640	—	—	—	—	238	183	—	—	82	—	3	—	1,309	—	514	—	—	—	980	—	717
Louisiane	Louisiana	1,879,024	11	23	381	24	947	15	2,462	14	828	85	29	538	2,991	31	—	3	—	598	1	883	21	2,661	2,661	2,318	—	731
Maine	Maine	782,541	—	20	1,258	—	259	4	1,873	—	—	363	3,239	—	577	29	—	—	—	1,054	29	1	—	446	—	265	—	655
Maryland	Maryland	1,537,085	—	23	3,486	—	1,483	44	2,015	1	51	3,268	2,581	3	3,966	48	111	5	—	2,490	80	16	2	3,368	3,252	1,264	6	4,223
Massachusetts	Massachusetts	4,127,653	5	112	7,516	—	4,482	146	1,244	—	11	28,816	2,674	19	5,544	167	228	3	—	10,319	116	3	76	6,800	5,422	592	2	8,077
Michigan	Michigan	4,154,625	—	—	6,782	—	3,925	73	361	1	8	10,332	2,433	1	5,708	99	—	2	—	12,303	574	784	—	5,785	—	963	—	7,576
Minnesota	Minnesota	2,563,550	2	34	5,046	—	3,778	32	598	1	—	961	—	2	2,039	929	3	—	—	9,574	—	973	17	3,871	—	334	—	1,655
Mississippi	Mississippi	1,790,618†	23	9	6,200	1,747	1,367	—	61,891	—	71,719	4,814	14,413	8,612	15,923	47	246	30	—	457	—	1,215	235	3,990	—	4,389	—	8,023
Missouri	Missouri	3,466,781	—	31	2,616	—	3,216	6	1,243	1	111	597	1,922	1	1,021	122	41	1	—	8,459	62	575	446	2,765	—	1,085	—	1,651
Montana	Montana	646,806	—	12	764	—	329	8	98	2	1	486	1,701	—	—	41	—	1	33	1,337	8	376	51	620	—	238	—	585
Nebraska	Nebraska	1,355,381	—	12	834	—	423	5	192	—	—	96	345	—	42	125	—	—	—	854	5	886	—	201	201	86	—	503
Nevada	Nevada	77,407†	—	6	73	—	9	—	32	—	—	8	8	—	94	27	—	—	9	53	—	97	—	76	76	7	—	33
New Hampshire	New Hampshire	450,171	—	3	225	—	170	—	22	—	—	783	165	—	27	21	—	—	—	1,181	5	—	—	81	81	28	—	148
New-Jersey	New Jersey	3,506,428	19	78	7,389	—	4,129	—	666	2	17	10,601	—	—	—	163	—	—	—	8,448	—	185	22	5,023	—	744	—	7,889
New-Mexico	New Mexico	379,074	1	1	657	—	231	—	469	—	14	598	350	14	325	12	96	—	—	348	13	25	—	1,300	—	405	—	457
New-York	New York	11,105,625	9	202	19,475	—	13,423	702	4,087	—	139	29,606	8,802	—	27,671	793	—	1	—	19,488	573	286	51	20,040	18,939	2,900	15	15,034
Caroline du Nord	North Carolina	2,759,014	—	26	3,845	—	3,437	2	—	—	—	1,002	—	—	—	79	—	—	—	1,856	104	1,920	32	—	—	1,192	—	4,296
Dakota du Nord	North Dakota	686,424	—	—	642	—	256	3	—	—	—	114	646	1	—	154	—	—	—	2,083	—	204	19	108	—	119	—	1,007
Ohio	Ohio	6,321,539	—	77	11,799	—	5,237	52	1,053	—	17	14,047	3,777	—	4,506	227	—	7	—	15,328	713	4,018	78	7,570	—	1,946	—	8,975
Oklahoma	Oklahoma	2,238,536	2	—	1,077	1	1,080	—	11,379	—	2,009	304	775	313	3,715	38	—	8	—	1,426	—	775	330	1,435	—	3,053	—	1,636
Oregon	Oregon	846,061	—	91	1,111	—	1,366	14	1,419	—	1	187	1,076	—	319	22	7	—	16	1,382	26	838	—	825	—	239	—	656
Pennsylvanie	Pennsylvania	9,317,647	12	83	17,521	—	10,179	62	—	2	30	41,730	14,731	9	3,929	183	—	1	—	21,380	—	212	35	6,091	—	2,437	—	13,020
Ile de Rhode	Rhode Island	639,401	—	7	463	—	533	4	135	—	—	2,350	81	—	98	37	—	—	—	825	10	94	—	491	419	94	—	254
Caroline du Sud	South Carolina	1,779,084	—	3	221	97	2,693	—	10,987	—	11,118	210	274	33	26	5	346	1	—	409	26	785	—	—	—	2,439	—	3,597
Dakota d. Sud	South Dakota	666,380	1	6	517	—	280	3	—	—	—	90	380	—	—	44	—	—	2	2,245	1	265	24	124	—	160	—	258
Tennessée	Tennessee	2,424,618	1	82	1,614	—	726	—	4,543	—	1,380	1,556	43	325	1,272	31	—	—	—	1,391	—	1,805	—	1,774	—	1,954	—	1,395
Texas	Texas	5,097,574	2	36	2,399	152	1,636	—	24,920	—	11,502	1,652	2,412	—	—	50	—	9	—	1,182	—	1,309	—	1,645	—	1,072	40	2,034
Utah	Utah	492,478	—	65	4,474	—	821	—	1,623	—	—	337	1,274	—	840	11	—	—	6	669	—	114	—	132	131	216	—	3,136
Vermont	Vermont	352,428†	—	2	1,788	—	166	—	5	—	—	630	2,030	—	132	81	—	—	—	737	3	—	—	209	—	40	—	985
Virginie	Virginia	2,419,443	—	66	4,945	—	2,761	4	32,473	—	1,515	6,195	—	189	—	89	—	—	—	2,338	—	296	—	2,528	2,528	1,846	1	7,161
Washington	Washington	1,478,214	1	61	4,154	—	1,424	5	—	2	2	347	3,609	2	—	115	14	—	1	2,104	38	2,004	1	1,839	1,646	390	—	3,273
Virginie occ.	West Virginia	1,601,130	—	21	1,495	—	1,085	—	1,506	—	—	2,371	—	—	—	17	—	—	—	2,011	—	820	—	583	—	1,597	—	1,514
Wisconsin	Wisconsin	2,801,008	—	43	8,289	—	2,363	29	3,671	—	—	13,727	8,240	—	—	313	—	—	—	5,862	—	1,517	17	1,857	—	284	—	6,239
Wyoming	Wyoming	221,842	—	8	511	—	97	—	60	—	—	129	207	—	—	10	—	—	38	392	9	70	—	61	—	97	—	191
	Total	110,996,369§	109	1,736	169,157	2,178	96,403	1,541	210,266	62	111,090	224,292	113,480	12,553	114,176	5,809	1,856	90	115	183,027	3,084	39,639	1,951	123,706	65,202	48,313	154	154,216

A noter que ces données sont provisoires, car certains Etats n'ont pas encore envoyé de rapports définitifs. — *Note.* These figures are provisional, as final reports have not been received from some of the States.
Peste, 2 cas en Californie au mois de janvier. — Plague, 2 cases in California in January.
* Aucun rapport. — No report.
† Population estimée au 1er janvier 1920. — Population estimated January 1st, 1920.
§ Iowa non-compris. — Exclusive of Iowa.

ÉTATS-UNIS — UNITED STATES

(Population: 113 502 000. E. 1 juillet 1925.)

Source: Information reçue du Service de la Santé publique des Etats-Unis. — Information received from the United Stat Public Health Service.

Maladie — Disease		Nombre d'Etats † Number of States †	Total Total	1925											
				Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*														
Angine septique	Septic sore throat	26	3084	278	227	314	255	252	487	115	81	176	292	276	33
Charbon	Anthrax	19	107	11	17	7	10	7	9	7	19	6	5	5	
Coqueluche	Whooping-cough	47*	154216	12697	12408	14729	16227	17045	15751	14877	11886	10006	8723	9028	1083
Dengue	Dengue	9	2178	82	69	21	25	16	29	29	124	379	834	467	10
Diphtérie	Diphtheria	47*	96403	9805	8730	8287	7462	7014	5864	4723	5122	6873	11156	11498	986
Encéphalite léthargique	Encephalitis lethargica	29*	1541	206	143	126	99	102	93	81	90	95	101	86	31
Fièvre des Montagnes rocheuses	Rocky Mountain spotted fever	11	115	1	0	4	41	40	19	8	2	0	0	0	
Fièvre typhoïde	Typhoid fever	47*	48313	2144	1427	1235	1456	2391	4409	6575	8313	7454	6601	3743	256
Grippe	Influenza	39	210266	34187	58524	49572	26348	8502	2527	1603	1948	1728	4408	8178	1274
Lèpre	Leprosy	14	62	3	6	5	5	9	9	6	5	5	5	0	
Méningite cérébro-spin.	Cerebro-spinal meningit.	39*	1566	163	117	187	152	135	121	104	115	131	90	81	17
Oreillons	Mumps	42	113480	15890	18644	21089	17401	12876	7416	3306	1735	1764	2611	4725	602
Paludisme	Malaria	29	111090	3277	3628	4230	6478	9689	12688	15006	17761	15994	11802	6700	383
Pellagre	Pellagra	22*	12553	278	453	712	1301	1978	2379	1718	1286	816	689	578	36
Pneumonie, toutes formes	Pneumonia, all forms	31*	114176	15887	17520	17737	13431	8440	5160	2590	2440	2953	5250	8720	1404
Poliomyélite aiguë	Poliomyelitis	47*	5809	132	98	89	106	104	254	805	1428	1359	932	341	16
Rage animale	Rabies in animals	13*	§ 1856	157	217	148	193	155	141	115	139	101	103	92	15
Rage humaine	Rabies in man	21	90	6	12	5	12	6	13	7	10	6	7	4	
Rougeole	Measles	47*	224292	13226	18057	26961	32681	37077	29419	9243	3000	2272	5222	14007	3312
Scarlatine	Scarlet fever	47*	183027	24234	24024	24889	21079	18303	10127	4877	4121	5517	10898	15723	1923
Trachome	Trachoma	26	1951	121	127	144	145	233	109	141	187	116	136	268	224
Tuberculose pulmonaire	Tuberculosis, pulmonary	18*	65202	5109	5129	5764	6245	5947	5706	5512	4644	5341	5008	5068	572
Tuberculose, toutes formes	Tuberculosis, all forms	42*	123706	9691	9985	10820	11935	11371	10935	10544	9061	10411	9742	9044	10167
Typhus exanthém.	Typhus	10	154	2	2	3	7	9	12	14	40	23	18	15	9
Varicelle	Chickenpox	47*	169157	26531	22051	19158	15516	14491	13076	4236	1849	1767	6731	19247	24504
Variole	Smallpox	47*	39639	6911	6397	5390	4974	4542	3562	1511	877	595	752	1684	2444

Deux cas de peste en Californie en janvier. — Two cases of plague in California in January.

† Nombre d'Etats ayant envoyé des rapports relatifs aux maladies spécifiées pour l'année 1925. — Number of States from which reports on the diseases sp cified were received in 1925.

* Y compris le district de Colombie. — Including the District of Columbia.

§ Y compris 142 cas dans le Kansas, qui ne sont pas donnés par mois. — Includes 142 cases in Kansas; data not given by months.

Note. Ces données sont provisoires, car plusieurs Etats n'ont pas encore envoyé leurs rapports définitifs. — These data are provisional, as final reports have n been received from many of the States.

ÉTATS-UNIS — UNITED STATES

(Population: 113 502 000. E. 1 juillet 1925.)

Source: United States Public Health Reports.

Maladie — Disease		Nombre d'Etats notifiant. Number of States reporting *	Populat. (E. 1 juil. 1925) en milliers; in thousands	1921	1922	1923	1924	1925
Cas	*Cases*							
Angine septique	Septic sore throat	17	49008	4048	2575	1781	1917	2951
Charbon	Anthrax	29	80729	74	89	137	170	105
Coqueluche	Whooping-cough	42	99851	†	105690	159294	142264	139267
Dengue	Dengue	16	36549	415	64253	2976	676	2080
Diphtérie	Diphtheria	45	104540	204235	163414	139472	115128	91726
Fièvre des Montagnes rocheuses	Rocky Mountain spotted fever	14	27742	74	167	121	99	113
Fièvre typhoïde	Typhoid fever	45	104540	46780	33916	32374	33446	46032
Grippe	Influenza	24	62756	36707	268991	332949	72666	177799
Méningite cérébro-spinale	Cerebro-spinal meningitis	40	93911	2076	1704	1793	1358	1602
Oreillons	Mumps	34	85447	†	46100	51027	122487	109661
Paludisme	Malaria	23	60676	188467	156411	138334	110124	107335
Pneumonie	Pneumonia	13	51437	†	92865	95591	89370	91236
Poliomyélite aiguë	Acute poliomyelitis	38	90836	6036	2138	3172	5078	5429
Rougeole	Measles	45	104540	267428	261441	729336	493766	223120
Scarlatine	Scarlet fever	45	104540	184264	152235	166418	175482	172590
Tuberculose, tout. form.	Tuberculosis, all forms	16	52567	92729	92161	89642	90910	89418
Tuberculose pulmonaire	Pulmonary tuberculosis	6	25906	46272	48054	46251	45245	43033
Typhus exanthématique	Typhus fever	38	97256	88	43	62	102	154
Varicelle	Chickenpox	45	104947	†	129855	151502	196340	160714
Variole	Smallpox	45	104540	94080	30934	29176	54639	38436
Gonorrhée	Gonorrhœa	43	107460	161354	150699	153356	157075	172959
Syphilis	Syphilis	43	107460	171231	165332	179511	190509	212633

		1921	1922	1923	1924	1925
Peste	Plague	2	2	1	41	2

* Comprend tous les Etats où la déclaration de la maladie spécifiée est obligatoire. — Including all those States in which the specified disease is notifiable and ordinarily reported.

† Les données manquent. — Data not available.

GRENADE — GRENADA

(Population : 69 000. E. 31 déc. 1924.)

Sources : Medical Report on the Charitable Institutions, etc., 1924.
Rapports du Ministère britannique de Santé, 1923-1925. — Reports from the British Ministry of Health, 1923-1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	C.	—	—	733	738	516	44	30	32	51	64	40	43	63	30	41	35	43
		D.	109	83	33	34	—	—	—	—	—	—	—	—	—	—	—	—	—
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	88	144	115	107	71	0	15	18	7	4	7	4	3	5	0	5	3
		D.	12	24	23	22	—	—	—	—	—	—	—	—	—	—	—	—	—
Grippe	Influenza	C.	62	—	628	207	281	30	22	21	28	16	12	18	12	24	52	18	28
Pneumonie	Pneumonia	C.	—	—	79	26	39	4	1	3	1	2	1	1	1	10	6	3	6
		D.	24	—	79	26	—	—	—	—	—	—	—	—	—	—	—	—	—

	Paludisme Malaria	Pellagre Pellagra	Poliomyélite aiguë Acute poliomyelitis		Tétanos Tetanus	Tuberculose pulmonaire Pulmonary tuberculosis		Tuberculose, autres formes Tuberculosis, other forms
	D.	D.	C.	D.	D.	C.	D.	D.
1919	88	0	—	—		80	65	2
1920	77	2	—	—	15	61	46	0
1921	69	0	—	—	13	35	50	2
1922	83	1	—	—	9	44	37	2
1923	—	—	—	—	—	36	41	5
1924	—	—	1	1	—	58	52	3

GUADELOUPE

(Population: 229 839. R. 1er juil. 1921.)

Sources: Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies.
Compte-rendu des maladies pestilentielles.

Maladie — Disease			Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc Dec.
Dysenterie	Dysentery	C.	6	2	2	0	0	1	1	0	0	0	0	0	0
		D.	1	0	1	0	0	0	0	0	0	0	0	0	0
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	3	0	0	1	0	0	0	0	2	0	0	0	0
Lèpre	Leprosy	C.	5	0	0	0	4	0	1	0	0	0	0	0	0
Variole (Alastrim)	Smallpox	C.	22	21	0	0	0	0	0	0	1	0	0	0	0

GUYANE BRITANNIQUE — BRITISH GUIANA

(Population: 297 691. R. avril 1921.)

Source: Rapports du Ministère britannique de Santé. — Reports from the British Ministry of Health.

Période de quatre semaines se terminant le : Four-week period ending:			Diphtérie Diphtheria		Dysenterie Dysentery		Fièvre typhoïde Enteric fever		Grippe Influenza		Pneumonie Pneumonia		Varicelle Chicken pox	
			C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Total		1919	—	—	—	385	525	112	—	3381	—	—	—	—
»		1920	—	—	—	246	795	138	—	163	—	—	—	—
»		1921	8	—	—	301	489	118	—	229	—	—	7	0
»		1922	27	—	—	300	461	92	—	105	—	705	68	0
»		1923	30	6	926	89	476	117	8473	77	920	772	29	0
»		1924	14	2	709	80	413	89	1465	28	875	688	100	1
»		1925	2	2	702	47	304	64	1660	24	1064	371	85	2
Janvier	— January	31	1	1	66	6	12	5	100	2	83	34	4	0
Février	— February	28	1	1	90	8	27	4	39	0	81	29	6	0
Mars	— March	28	0	0	59	1	50	5	49	2	79	36	6	0
Avril	— April	25	0	0	43	3	37	8	68	0	76	30	9	1
Mai	— May	23	0	0	42	2	31	3	9	0	62	19	5	1
Juin	— June	20	0	0	33	2	16	4	14	0	90	36	12	0
Juillet	— July	18	0	0	31	2	9	3	233	4	106	29	17	0
Août	— August	15	0	0	31	3	17	3	657	10	94	30	12	0
Septembre	— September	12	0	0	38	6	17	3	345	3	119	38	7	0
Octobre	— October	10	0	0	32	1	19	4	45	2	75	32	5	0
Novembre	— November	7	0	0	54	3	18	5	51	0	65	22	0	0
Décembre	— December	5	0	0	79	7	26	9	33	1	75	21	0	0
1926 Janvier	— January	2	0	0	104	3	25	8	17	0	59	15	0	0

1 cas de variole en 1923. — 1 case of smallpox in 1923.

GUYANE FRANÇAISE — FRENCH GUIANA

(Population: 44 200. R. 1er juil. 1921.)

Sources: Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies. Compte-rendu des maladies pestilentielles.

Maladie — Disease			Total 1925	1925											
				Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc Dec
Dysenterie	Dysentery	C.	5	2	—	—	—	—	1	—	—	—	1	—	1
Fièvres typhoïde	Enteric fever	C.	6	0	1	0	3	0	1	0	0	0	0	0	1
et paratyphoïde		D.	2	0	0	0	2	0	0	0	0	0	0	0	0
Lèpre	Leprosy	C.	3	0	0	0	0	0	0	0	0	0	1	0	2
Variole (Alastrim)	Smallpox	C.	2	0	0	0	0	0	0	2	0	0	0	0	0

HAÏTI — HAITI

(Population: 2 230 000. R. novembre 1919.)

Source: Rapports mensuels du Service national d'Hygiène publique. — Monthly Reports from the National Health Service

Cause de décès Cause of death		Total 1924	Total 1925	1925											
				Janv. Jan.	Févr. Febr.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc Dec
Béribéri	Beri-beri	3	1	0	0	0	0	0	0	0	1	0	0	0	
Coqueluche	Whooping-cough	23	36	6	0	1	3	15	3	3	3	0	1	0	
Dysenterie	Dysentery	524	314	29	18	17	22	36	19	51	33	35	16	19	1
Fièvre puerpérale	Puerperal fever	21	19	0	2	0	4	3	1	1	2	0	2	2	
Fièvre typhoïde	Enteric fever	20	33	5	3	3	5	2	2	2	6	1	2	2	
Grippe	Influenza	11	27	5	8	7	1	0	0	0	1	0	3	0	
Méningite cérébro-spinale	Cerebro-spinal meningitis	2	0	0	0	0	0	0	0	0	0	0	0	0	
Paludisme	Malaria	365	513	28	270	14	16	7	28	33	16	46	16	18	2
Pneumonie et broncho-pneum.	Pneumonia and broncho-pneum.	118	120	5	13	10	16	11	14	8	11	13	6	4	
Syphilis	Syphilis	280	274	34	27	37	29	15	15	25	17	13	14	16	3
Tétanos	Tetanus	13	24	0	1	3	3	2	1	5	2	1	1	1	
Tuberculose	Tuberculosis	616	590	51	46	61	50	46	48	59	50	47	50	42	4

HAWAÏ — HAWAII

(Population: 275 688. E. 31 déc. 1922.)

Source: «Public Health Reports» des Etats-Unis. — United States Public Health Reports.

Maladie — Disease		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925										
							Jan. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	De De
Cas	*Cases*																	
Diphtérie	Diphtheria	186	235	186	223	310	27	24	29	15	22	25	24	21	35	24	29	3
Fièvre typhoïde	Enteric fever	230	183	176	119	97	9	8	7	11	9	16	12	9	9	0	2	
Grippe	Influenza	786	788	2455	471	333	12	10	149	50	19	21	20	16	16	8	3	
Méningite cérébro-spinale	Cerebro-spinal meningitis	21	17	13	53	29	6	0	3	5	5	2	2	2	2	0	1	
Paludisme	Malaria	—	—	—	8	—	—	—	—	—	—	—	—	—	—	—	—	
Poliomyélite	Poliomyelitis	3	—	10	2	—	—	—	—	—	—	—	—	—	—	—	—	
Rougeole	Measles	358	1388	1145	182	599	14	47	122	120	71	59	37	24	9	14	44	3
Scarlatine	Scarlet fever	21	32	21	14	22	2	0	4	1	3	0	4	1	1	2	0	
Tuberculose toutes formes	Tuberculosis all forms	955	901	990	1027	113	8	14	9	11	5	20	11	7	7	10	7	
Variole	Smallpox	4	2	1	3	2	0	0	0	0	0	0	0	0	0	0	1	

Année Year	Conjonctivit. folliculaire Follicular conjunctiv. c.	Coqueluche Whooping-cough c.	Dengue Dengue c.	Dysenterie Dysentery c.	Lèpre Leprosy c.	Peste[1] Plague[1] c.	Tétanos Tetanus c.	Trachome Trachoma c.	Tuberculose pulmonaire Pulmonary Tuberculosis c.	Varicelle Chickenpo c.
1921	—	—	1	—	—	3	—	—	869	—
1922	—	340	—	—	—	6	—	—	778	128
1923	47	594	1	10	64	1	24	397	—	114
1924	—	291	—	—	—	0	—	—	903	283
1925	158	29	—	8	68	1	19	580	962	214

[1] Les décès signalés sont: 1921, 2 décès; 1922, 12 décès; 1923, 1 décès. — Deaths reported were as follows: 1921, 2; 1922, 12; 192, 13.

JAMAIQUE — JAMAICA

(Population : 904 400. E. 31. XII. 1924.)

Sources : Rapport annuel du Médecin en chef, 1922-1924. — Annual Report of the Superintending Medical Officer, 1922-1924. Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease		Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*																
Béribéri	Beri-beri	0	0	1	0				0			0	0	0	0	0	0
Diphtérie	Diphtheria	12	6	10	13				6			0	2	1	0	1	3
Encéphalite léthargique	Encephalitis lethargica	—	—	0	7				6			0	0	0	0	0	1
Fièvres typhoïde et paratyphoïde	Enteric fever	1187	879	1108	850				476			96	39	80	49	50	60
Fièvre puerpérale	Puerperal fever	9	3	11	12				8			0	0	0	1	1	2
Lèpre	Leprosy	13	2	7	9				6			2	0	0	1	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	2	2	4	0				0			0	0	0	0	0	0
Ophtalmie des nouveau-nés	Ophthalmia neonatorum	10	7	15	10				3			2	0	2	1	1	1
Grippe	Influenza	—	—	15	12				12			0	0	0	0	0	0
Poliomyélite aiguë	Acute poliomyelitis	2	0	1	0				0			0	0	0	0	0	0
Scarlatine	Scarlet fever	7	0	0	5				5			0	0	0	0	0	0
Tuberculose pulmonaire	Pulmonary tuberculosis	532	475	603	552				311			40	31	51	47	36	36
Varicelle	Chickenpox	55	54	168	146				81			10	29	6	6	0	14
Variole (Alastrim)	Smallpox	1419	1804	1266	926				478			59	43	87	75	42	142

LA TRINITÉ ET TOBAGO — TRINIDAD AND TOBAGO

(Population: 362 780. R. 24 avril 1921.)

Sources : Rapports annuels de l'Inspecteur médical d'hygiène ; Rapports du Ministère britannique de Santé. — Annual Administration Reports of the Medical Inspector of Health; Reports from the British Ministry of Health.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1925	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	C.	388	638	654	473	1155	13	26	19	35	98	157	240	249	140	62	39	77
		D.	222	219	197	215	—	—	—	—	—	—	—	—	—	—	—	—	—
Grippe	Influenza	C.	2536	905	2086	179	664	36	40	65	64	44	18	26	55	73	110	77	56
		D.	214	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonie	Pneumonia	C.	759	888	549	187	309	25	27	28	24	17	20	27	32	23	30	34	22
		D.	470	456	308	188	—	—	—	—	—	—	—	—	—	—	—	—	—

	Diphtérie Diphtheria		Fièvre typhoïde Enteric fever		Varicelle Chickenpox
	C.	D.	C.	D.	C.
1921	26	—	820	240	16
1922	17	—	732	199	92
1923	22	6	648	143	54
1924	41	4	1012	209	51

MARTINIQUE

(Population: 244 430. R. 1er juil. 1921.)

Sources : Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies. Compte-rendu des maladies pestilentielles.

Maladie — Disease			Total	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov	Déc. Dec.
Diphtérie	Diphtheria	C.	1	0	0	1	0	0	0	0	0	0	0	0	0
		D.	1	0	0	1	0	0	0	0	0	0	0	0	0
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	52	8	3	1	4	3	2	0	0	1	0	0	30
		D.	4	1	0	0	0	0	0	0	0	1	0	0	2
Lèpre	Leprosy	C.	13	4	3	1	2	1	2	0	0	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	1	1	0	0	0	0	0	0	0	0	0	0	0
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0
Variole (Alastrim)	Smallpox	C.	11	0	0	0	0	3	0	0	0	8	0	0	0

MEXIQUE — MEXICO

(Population: 13 887 000 R. 1921.)

Source: Rapports du Département de la Santé Publique. — Reports from the Public Health Department.

Cause de décès — Cause of death		Total 1921 *	Total 1922	Total 1923 **	Total 1924	Total 1925
Coqueluche	Whooping-cough	1092	3396	2367	2430	8201
Diphtérie	Diphtheria	72	200	120	202	781
Dysenterie	Dysentery	1031	2427	732	1917	9854
Erysipèle	Erysipelas	173	230	254	379	1382
Fièvre typhoïde	Typhoid fever	707	1730	1204	1108	6739
Grippe	Influenza	655	1802	639	1053	2791
Infection puerpérale	Puerperal infection	—	87	210	251	863
Lèpre	Leprosy	6	48	43	78	258
Méningite cérébro-spinale	Cerebro-spinal meningitis	—	—	3	1	42
Paludisme	Malaria	2837	2322	1274	1174	8653
Rage	Rabies	1	3	16	12	46
Rougeole	Measles	764	732	608	1217	10681
Scarlatine	Scarlet fever	15	58	88	53	691
Syphilis	Syphilis	294	669	361	560	1991
Tétanos	Tetanus	365	119	209	234	924
Tuberculose, toutes formes	Tuberculosis, all forms	2747	3220	2183	2426	9696
Typhus exanthématique	Typhus	202	262	118	153	657
Variole	Smallpox	1145	1966	2105	2702	8735

* Données pour le deuxième semestre seulement. — Data for second half-year only.
** Données pour le premier semestre seulement. — Data for first half-year only.

PÉROU — PERU

(Population: 4 607 000. R. 1896.)

Source: Rapport du Département de la Santé publique. — Report from Public Health Department.

		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925 *
Peste	Plague					
	C.	870	804	880	418	112
	D.	505	372	414	182	56

* Les données pour 1925 ne concernent que les villes de Lima et de Callao. — Data for 1925 are for the towns of Lima and Callao only.

PORTO-RICO

(Population: 1 355 986. E. 31 déc. 1922.)

Source: Public Health Reports des Etats-Unis. — United States Public Health Reports.

Maladie — Disease		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*																	
Charbon	Anthrax	—	—	—	5	2	1	0	0	0	0	0	0	1	0	0	0	0
Coqueluche	Whoop.-cough	—	—	92	390	185	5	10	7	18	25	21	23	14	19	13	14	16
Diphtérie	Diphtheria	99	116	262	472	361	53	32	36	25	26	24	22	19	35	35	26	28
Fièvre typh.	Typh. fever	429	301	870	810	794	41	39	21	42	110	131	38	51	59	41	99	122
Grippe	Influenza	634	—	10486	128	479	218	115	71	24	9	8	5	5	7	4	6	7
Méningite cérébro-sp.	Cerebro-spinal meningit.	—	—	—	3	1	0	0	0	0	0	0	0	0	0	0	1	0
Paludisme	Malaria	1289	—	515	1205	2346	144	107	128	121	111	111	186	141	341	141	392	423
Pneumonie, toutes formes	Pneumonia, all forms	—	—	—	5	1506	191	165	126	117	130	108	153	96	103	104	94	119
Rougeole	Measles	1296	—	57	188	1570	86	210	123	226	247	176	131	112	64	70	50	75
Tuberculose, toutes formes	Tuberculosis, all forms	—	—	—	1670	3234	257	287	302	262	279	185	333	245	266	273	281	264
Varicelle	Chickenpox	—	69	97	71	72	0	12	3	22	2	0	1	4	0	0	3	25

	1921	1922	1923	1924	1925
Variole — Smallpox	1	6	0	0	0

RÉPUBLIQUE DOMINICAINE — DOMINICAN REPUBLIC

(Population: 1 022 480. E. 1. janv. 1926.)

Source: Secretaria de Estado de Sanidad y Beneficencia.

Cause de décès — Cause of Death		Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Coqueluche	Whooping-cough	3	114	6	3	12	31	5	16	9	6	2	10	13	1
Diarrhée et entérite	Diarrhœa and enteritis	57	84	12	3	8	4	3	9	5	6	4	10	11	9
Diphtérie	Diphtheria	13	12	0	0	0	0	0	0	0	1	3	5	2	1
Dysenterie	Dysentery	385	271	52	17	21	14	15	23	27	19	11	25	21	26
Erysipèle	Erysipelas	—	21	6	0	1	3	10	1	0	0	0	0	0	0
Fièvre puerpérale	Puerperal fever	7	24	3	3	5	7	2	1	0	0	0	0	1	2
Fièvres typhoïde et paratyphoïde	Enteric fever	199	245	2	13	16	19	23	44	11	34	15	27	15	26
Grippe	Influenza	4	171	0	0	0	0	3	0	0	0	4	20	62	82
Lèpre	Leprosy	—	3	0	0	0	0	0	0	0	0	1	2	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	3	35	6	17	3	3	0	5	1	0	0	0	0	0
Paludisme	Malaria	220	1804	165	147	124	139	113	125	144	146	166	158	183	194
Pneumonie et broncho-pneum.	Pneumonia and broncho-pneum.	125	498	50	26	61	49	36	26	19	28	30	38	59	76
Rougeole	Measles	5	5	0	0	0	0	0	0	0	0	0	2	2	1
Tétanos	Tetanus	—	405	30	14	34	36	16	50	31	24	46	40	46	38
Tuberculose toutes formes	Tuberculosis all forms	345	455	33	24	35	29	36	36	47	48	40	35	46	46

Deux cas de fièvre jaune en 1924. — Two cases of Yellow fever in 1924.

St-CHRISTOPHE ET NEVIS — St. KITTS AND NEVIS

(Population: 36 518. E. 31 déc. 1924.)

Source: Rapport médical et sanitaire annuel. — Annual Medical and Sanitary Report.

Maladie — Disease			1919	1920	1921	1922	1923	1924
Coqueluche	Whooping-cough	C.	—	743	202	22	2	3
Diarrhée et entérite	Diarrhœa and enteritis	D.	220	425	176	117	180	146
Dysenterie	Dysentery	C.	—	—	316	347	173	304
		D.	6	26	58	76	66	67
Fièvre jaune	Yellow fever	C.	0	1	0	0	0	0
		D.	0	1	0	0	0	0
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	—	49	273	269	215	174
		D.	11	21	46	35	33	28
Lèpre	Leprosy	C.	11	16	5	1	5	2
		D.	4	14	11	5	7	3
Paludisme	Malaria	D.	0	0	1	17	4	2
Pellagre	Pellagra	D.	0	4	1	0	0	4
Rougeole	Measles	C.	36	724	98	2	1	22
		D.	1	31	5	0	0	0

Ste-LUCIE — St. LUCIA

(Population: 53 847. E. 1923.)

Sources: Annual Report of the Chief Medical Officer, 1922-1923.
Rapports périodiques du Ministère britannique de Santé, 1924-1925. — Current Reports from the British Ministry of Health, 1924-1925.

Maladie — Disease		Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*																
Dysenterie	Dysentery	20	36	48	30	6	3	3	3	1	0	0	1	3	3	4	3
Grippe	Influenza	—	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pneumonie	Pneumonia	52	142	151	159	19	14	8	11	21	21	4	9	14	23	6	9

	Alastrim	Tuberculose Tuberculosis	Varicelle Chickenpox	Variole Smallpox
1922	1	115	5	1
1923	18	88	57	0
1924	—	—	—	0
1925	—	—	—	0

St. VINCENT

(Population: 44 925. R. avril 1921.)

Source : Annual Medical Report, 1921-1924.
Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc Dec
Dysenterie	Dysentery	C.	419	447	461	162	216	10	13	18	9	26	14	34	30	23	12	14	13
		D.	37	29	13	13	10	1	0	0	0	1	0	3	2	1	0	1	1
Grippe	Influenza	C.	183	1437*	2124*	2483	2167	196	221	157	66	77	39	74	173	199	470	325	170
		D.	2	37*	55*	60	21	0	0	1	0	0	0	2	0	3	3	7	5
Pneumonie	Pneumonia	C.	—	—	124	145	68	9	10	5	5	3	2	7	7	14	5	0	1
		D.	—	—	15	16	9	0	1	0	0	1	0	0	0	4	2	0	1

* Pneumonie grippale comprise. — Influenzal pneumonia included.

URUGUAY

(Population: 1 603 000. E. 31 déc. 1923.)

Sources: Resumen Anual de Estadística Municipal, Montevideo 1921-1924. — Boletín del Consejo Nacional de Higien
Montevideo, 1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Charbon	Anthrax	C.	119	110	171	97	138	9	13	35	20	9	14	5	3	4	5	12	6
		D.	32	29	28	22	31	3	1	3	4	2	2	1	1	0	1	1	2
Coqueluche	Whooping-cough	C.	145	173	174	158	411	22	14	13	3	2	41	86	105	51	21	24	29
		D.	43	54	42	106	112	5	3	0	2	1	2	4	7	5	7	2	0
Diphtérie	Diphtheria	C.	1137	627	635	418	266	27	23	14	34	23	29	24	24	14	19	18	17
		D.	167	79	62	44	31	4	1	0	0	3	4	2	3	7	2	2	1
Encéphalite léth.	Encephal. leth.	C.	—	—	—	—	4	0	0	2	0	0	0	0	0	1	1	0	0
		D.	9	11	3	5	4	0	0	1	0	0	0	0	0	0	0	0	0
Erysipèle	Erysipelas	C.	31	16	8	26	15	2	1	1	1	0	3	3	1	1	0	0	2
		D.	18	19	10	16	6	0	0	0	1	0	1	2	0	0	1	0	0
Fièvre typhoïde	Enteric fever	C.	816	636	669	555	704	57	76	177	157	95	40	15	10	10	5	12	50
		D.	284	234	258	196	263	12	39	39	38	27	13	1	6	8	1	6	11
Grippe	Influenza	C.	—	64	226	815	42	0	1	0	1	0	4	8	17	8	3	2	0
		D.	185	51	223	186	119	1	6	0	1	2	1	8	11	6	3	2	1
Lèpre	Leprosy	C.	1	2	2	7	17	0	2	0	0	0	7	0	1	2	0	0	0
		D.	6	8	6	2	4	0	0	0	0	1	0	0	0	0	1	0	0
Méningite cérébro-spin.	Cerebro-spinal meningitis	C.	8	11	8	5	5	0	1	0	0	0	0	0	2	1	1	0	0
		D.	6	6	9	15	9	2	0	1	1	0	0	1	0	3	2	1	1
Peste	Plague	C.	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poliomyélite aiguë	Acute polio-myelitis	C.	—	0	—	—	—	0	0	0	6	29	30	0	0	2	2	0	1
		D.	4	4	2	1	1	0	0	0	0	0	0	0	0	0	2	0	0
Rougeole	Measles	C.	174	126	392	1159	948	97	51	89	27	42	59	41	96	140	131	149	26
		D.	13	35	61	75	16	6	1	4	0	0	2	0	2	4	4	8	0
Scarlatine	Scarlet fever	C.	136	75	126	783	354	23	21	37	34	42	44	34	24	25	20	23	27
		D.	4	5	3	23	10	0	0	0	0	2	2	0	0	0	1	3	1
Septicémie puerpérale	Puerperal septicæmia	C.																	
		D.	76	63	69	66	65	4	1	0	0	0	4	4	2	3	2	2	1
Trachome	Trachoma	C.	—	0	7	0	16	2	1	1	4	0	0	0	0	0	0	3	8
Tuberculose du larynx et des poumons	Tuberculosis of the larynx and the lungs	C.	1151	1172	1222	1249	2014	95	86	156	161	154	193	173	221	217	204	167	187
		D.	1846	1891	1821	1969	2218	146	149	140	115	116	114	131	150	131	125	140	147
Varicelle	Chickenpox	C.	160	157	285	344	209	22	8	11	9	3	20	26	32	17	17	29	15
		D.	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
Variole	Smallpox	C.	31	0	422	158	15	0	1	3	6	1	2	1	1	0	0	0	0
		D.	15	0	16	7	0	0	0	0	0	0	0	0	0	0	0	0	0

Les totaux annuels sont rectifiés. Les données mensuelles sont provisoires.
Annual totals are corrected. Monthly data are provisional.

ZONE DU CANAL DU PANAMA ET VILLES DE PANAMA ET DE COLON
PANAMA CANAL ZONE AND CITIES OF PANAMA AND COLON

(Population : 125 760. E. 31 déc. 1925.)

Sources: Rapports mensuels du Médecin-chef du Service sanitaire. — Monthly Reports from Chief Health Officer.
Rapports du Département de Santé du Canal de Panama, 1921-1925. — Reports of the Health Department of the Panama Canal, 1921-1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Angine de Vincent	Vincent's angina	C.	3	0	3	12	—	—	—	—	—	—	—	—	—	—	—	—	—
Ankylostomiase	Ankylostomiasis	C.	13	584	624	1148	1397	106	40	103	77	76	44	115	140	105	138	159	294
Béri-béri	Beri-beri	D.	2	2	2	1	2	—	—	—	—	—	—	—	—	—	—	—	—
Coqueluche	Whooping-cough	C.	271	15	73	191	83	52	13	7	0	2	1	4	7	0	0	2	5
		D.	2	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Dengue	Dengue	C.	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diphtérie	Diphtheria	C.	136	174	99	67	86	4	11	0	6	3	9	7	8	4	7	9	18
		D.	6	9	2	7	7	0	0	0	2	0	0	1	0	0	1	1	2
Dysenterie	Dysentery	C.	26	55	66	70	111	6	3	7	1	10	9	8	21	11	13	11	11
		D.	17	13	8	18	21	—	1	1	0	1	1	0	8	1	3	1	4
Fièvre récurrente	Relapsing fever	C.	7	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre typhoïde	Typhoid fever	C.	36	31	24	19	24	2	2	1	1	5	1	1	1	2	0	3	4
		D.	6	5	1	2	3	0	0	1	0	0	0	1	0	1	1	0	0
Grippe	Influenza	D.	20	3	1	3	1	—	—	—	—	—	—	—	—	—	—	—	—
Lèpre	Leprosy	C.	11	10	9	21	15	0	1	1	0	2	0	2	1	1	0	1	6
		D.	0	5	2	1	2	0	0	0	1	0	1	0	0	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	D.	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Oreillons	Mumps	C.	374	27	21	93	23	1	3	2	7	2	1	2	0	0	1	0	4
Paludisme	Malaria	C.	1464	1552	1606	1568	1639	149	102	74	59	121	194	181	176	153	154	111	165
		D.	19	18	19	25	39 †	—	3	1	3	2	2	1	4	2	3	7	11
Pian	Yaws	C.	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Pellagre	Pellagra	D.	14	18	10	16	12	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonie*	Pneumonia*	D.	275	212	250	312	218 †	—	17	26	23	19	14	18	17	26	20	14	24
Poliomyélite	Poliomyelitis	C.	3	3	0	12	15	0	0	0	0	0	0	0	0	1	7	5	2
		D.	1	0	0	0	2	—	0	0	0	0	0	0	0	0	2	0	0
Rougeole	Measles	C.	228	79	353	449	288	9	15	20	18	23	50	29	27	39	22	16	20
		D.	3	0	3	9	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	C.	58	24	6	1	3	0	1	0	0	1	0	0	1	0	0	0	0
		D.	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trachome	Trachoma	C.	1	1	3	4	—	—	—	—	—	—	—	—	—	—	—	—	—
Trichinose	Trichinosis	C.	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Tétanos	Tetanus	D.	5	4	5	2	2	—	—	—	—	—	—	—	—	—	—	—	—
Tuberculose, toutes formes	Tuberculosis, all forms	D.	308	329	282	307	312 †	—	30	22	23	28	35	27	36	29	33	31	18
Varicelle	Chickenpox	C.	136	159	245	170	311	31	42	38	40	23	24	28	19	24	14	14	14
		D.	—	—	—	—	1	0	0	0	1	0	0	0	0	0	0	0	0
Variole	Smallpox	C.	215	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* Comprend la broncho-pneumonie, la pneumonie non spécifiée et la pneumonie lobaire. — Including broncho-pneumonia, unqualified pneumonia and lobar-pneumonia.

† Données pour onze mois seulement. — Data for eleven months only.

ASIE — ASIA

CEYLAN — CEYLON (Population: 4 504 549. R. mars 1921.)

Source: Rapports du Ministère britannique de Santé. — Reports from the British Ministry of Health.

Maladie — Disease			Total 1923	Total 1924	Total 1925	1925 Période de quatre semaines se terminant le: — Four-week period ending: Janv. Jan. 24	Fév. Feb. 21	Mars March 21	Avril April 18	Mai May 16	Juin June 13	Juillet July 11	Août Aug. 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Dec. 31
Choléra asiatique *	Asiatic cholera *	C.	—	17	231	24	2	8	36	28	83	34	8	0	0	7	0	1
		D.	8	14	165	17	2	8	23	21	55	26	6	0	0	6	0	1
Peste	Plague	C.		153	65	2	8	7	8	1	5	11	5	9	2	1	4	2
		D.	213	131	60	2	7	7	8	1	5	8	5	8	2	1	4	2
Variole	Smallpox	C.	175	40	26	2	2	11	6	2	0	0	1	0	0	0	0	2
		D.	33	2	3	0	0	0	1	0	0	0	1	0	0	0	0	1

* Choléra asiatique: 628 cas en 1919 et 115 cas en 1920. — Asiatic cholera: 628 cases in 1919 and 115 cases in 1920.

	Dysenterie Dysentery D.	Fièvre récurrente Relapsing fever D.	Grippe Influenza D.	Pneumonie Pneumonia D.	Typhus exanth. Typhus D.
1924	15	15	19	53	3
1925	—	—	—	—	0

Rapports des hôpitaux de Ceylan.
Hospital Returns for Ceylon.

Nombre de cas de maladies infectieuses et de décès dus à ces maladies enregistrés dans les hôpitaux de Ceylan.

Number of Cases of and Deaths from Certain Infectious Diseases registered in the Hospitals of Ceylon.

Maladie — Disease			1921	1922	1923	1924
Ankylostom.	Ankylostom.	C.	11082	9822	11344	11728
		D.	1721	987	1030	865
Dysenterie	Dysentery	C.	5518	3446	5884	6165
		D.	—	673	993	1217
Fièvre typh.	Enteric fever	C.	942	857	921	1600
		D.	242	188	270	408
Lèpre	Leprosy	C.	*a* 505	100	294	183
Peste	Plague	C.	187	160	232	153
		D.	171	150	211	145
Variole	Smallpox	C.	18	337	240	45
		D.	—	43	35	9

Décès dus à certaines maladies infectieuses notifiés par le « Registrar-General » de Ceylan.

Deaths from Certain Infectious Diseases reported by the Registrar-General for Ceylon.

Cause de décès — Cause of Death		1921	1922	1923	1924
Ankylostom.	Ankylostomiasis	2930	1869	1857	1853
Diarrhée	Diarrhœa	12573	9700	10888	9026
Dysenterie	Dysentery	4255	2515	3325	4080
Fièvre typh.	Enteric fever	668	542	597	816
Paludisme	Malaria	1502	1621	2118	1388
Phtisie	Phthisis	3148	3108	3322	3235
Pneumonie	Pneumonia	6708	7486	8921	8339
Rachitisme	Rickets	6462	5119	5097	4078
Rage humaine	Rabies	18	25	30	37
Septic. puerp.	Puerp. septicæm.	1667	1540	1568	1322
Tétanos	Tetanus	230	247	241	269

a Nombre de lépreux existant au 31 décembre 1921. — Number of lepers remaining on December 31st, 1921.

CHINE — CHINA

CHANG-HAÏ (Ville Internationale) — SHANGHAI (International Settlement)

Etrangers — Foreigners. (Population : 29 265. R. oct. 1925.)

Sources: Rapport annuel du Conseil municipal, 1924. — Annual Report from the Municipal Council, 1924. Rapport mensuel du Commissariat d'Hygiène publié dans la « Gazette officielle ». Monthly Public Health Report in the "Municipal Gazette".

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Béribéri	Beri-beri	D.	28	26	17	28	19	1	2	4	3	2	0	1	1	4	1	0	0
Choléra asiatique	Asiatic cholera	C.	40	9	10	0	22	0	0	0	0	0	0	1	14	7	0	0	0
		D.	17	1	3	0	7	0	0	0	0	0	0	1	5	1	0	0	0
Coqueluche	Whooping-cough	D.	—	1	2	5	1	0	0	0	0	0	0	1	0	0	0	0	0
Diarrhée	Diarrhœa	D.	5	17	16	11	23	2	1	1	0	3	1	0	8	4	0	3	0
Diphtérie	Diphtheria	C.	80	40	39	45	42	2	5	7	3	4	2	3	4	2	3	4	3
		D.	6	1	—	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Dysenterie	Dysentery	C.	121	32	33	148	76	4	6	1	0	6	4	13	12	11	7	5	7
		D.	21	14	9	11	11	0	1	0	0	2	2	0	2	4	0	0	0
Fièvre récurrente	Relapsing fever	C.	—	—	—	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre paratyphoïde	Paratyph. fever	C.	11	8	8	20	12	0	0	3	0	1	0	1	2	0	0	1	4
		D.	1	4	1	1	2	0	0	0	0	0	1	0	1	0	0	0	0
Fièvre typhoïde	Typhoid fever	C.	44	27	14	37	47	1	5	2	1	2	0	5	2	3	0	10	16
		D.	26	42	26	18	18	1	1	0	0	0	1	0	3	3	4	2	3
Grippe	Influenza	C.	—	—	—	13	18	0	7	9	1	1	0	0	0	0	0	0	0
		D.	4	6	10	9	9	1	5	1	0	1	1	0	0	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	D.	5	6	3	2	4	0	0	0	0	0	0	1	1	1	0	1	0
Rougeole	Measles	C.	—	—	—	7	3	0	0	1	1	0	0	1	0	0	0	0	0
		D.	4	6	4	6	2	0	1	0	0	1	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	C.	28	27	11	23	46	13	2	6	2	2	5	0	1	4	0	4	7
		D.	3	8	—	3	4	1	1	1	0	0	0	0	0	0	0	0	1
Tuberculose, toutes formes	Tuberculosis, all forms	D.	45	48	64	69	63	7	4	3	9	7	5	12	2	4	4	5	1
Typhus exanth.	Typhus	D.	—	—	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0
Variole	Smallpox	C.	84	34	23	46	43	0	3	2	3	4	2	2	0	0	0	9	18
		D.	41	18	9	20	11	0	2	1	1	0	0	0	0	0	0	3	4

Population chinoise — Chinese Population. (Population : 791 000. R. oct. 1925.)

Décès	*Deaths*																	
Charbon	Anthrax	0	—	—	—	2	0	1	0	0	1	0	0	0	0	0	0	0
Béribéri	Beri-beri	0	23	14	30	25	0	0	0	0	3	1	10	3	3	3	1	1
Choléra asiatique	Asiatic cholera	38	100	91	0	93	0	0	0	0	0	0	1	64	28	0	0	0
Diarrhée	Diarrhœa	119*	—	—	—	367	8	5	9	5	15	24	41	124	80	34	14	8
Diphtérie	Diphtheria	62	53	29	25	23	3	3	2	3	2	1	0	0	0	2	3	4
Dysenterie	Dysentery	—	—	69	73	125	4	2	0	3	3	5	13	27	24	21	12	11
Fièvre typhoïde	Typhoid fever	—	0	264	283	310	23	19	15	23	14	16	25	33	48	33	40	21
Fièvre paratyphoïde	Paratyphoid fever	—				0	0	0	0	0	0	0	0	0	0	0	0	0
Grippe	Influenza	76	98	38	35	37	4	5	4	3	8	4	0	0	1	0	4	4
Méningite cérébro-spinale	Cerebro-spinal meningitis	25	8	3	6	2	0	0	0	1	0	0	0	0	0	0	1	0
Peste	Plague	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Rougeole	Measles	—	212	56	113	62	1	1	6	12	12	13	5	0	0	1	4	7
Scarlatine	Scarlet fever	149	149	71	75	80	8	5	2	8	13	2	4	5	3	1	7	22
Tuberculose, toutes formes	Tuberculosis, all forms	879	870	822	867	871	71	57	71	71	79	66	66	81	84	75	76	74
Variole	Smallpox	204	230	51	92	59	7	7	3	1	2	1	1	0	0	5	10	22

CONCESSION FRANCAISE (Etrangers) — FRENCH SETTLEMENT (Foreigners). Population : 7 811. R. oct. 1925.)

Maladie — Disease		Total 1922	Total 1923	Total 1924	Total 1925	1925 Période de quatre semaines se terminant le — Four-week period ending: Janv. Jan. 24	Févr. Feb. 21	Mars March 21	Avril April 18	Mai May 16	Juin June 13	Juill. July 11	Août Aug. 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Dec. 26	Déc. 27 Jan. 2
Cas	*Cases*																		
Choléra asiatique	Asiatic cholera	0	6	4	13	0	0	0	0	0	0	0	3	10	0	0	0	0	0
Diarrhée	Diarrhœa	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Diphtérie	Diphtheria	3	7	25	14	1	1	4	1	1	2	1	2	0	0	0	1	0	0
Dysenterie	Dysentery	62	46	84	24	6	2	3	1	1	0	1	4	0	1	1	2	2	0
Fièvres typhoïde et paratyphoïde	Enteric fever	24	13	29	15	1	1	3	1	0	0	2	2	2	0	2	0	1	1
Rage	Rabies	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	6	13	18	14	0	5	3	1	1	1	0	0	0	0	0	1	2	0
Tuberculose, toutes formes	Tuberculosis, all forms	8	11	16	33	3	3	5	2	1	2	3	3	2	0	2	4	3	1
Variole	Smallpox	6	15	14	12	0	1	0	2	1	1	0	0	0	0	1	1	5	2

Population chinoise — Chinese Population. (Population : 297 720. R. oct. 1925.)

Décès	*Deaths*				**														
Choléra asiatique	Asiatic cholera	—	—	—	51	—	—	—	—	—	0	0	10	33	8	0	0	0	0
Diarrhée	Diarrhœa	—	—	—	5	—	—	—	—	—	0	0	0	5	0	0	0	0	0
Diphtérie	Diphtheria	—	—	—	1	—	—	—	—	—	0	0	0	0	0	0	0	1	0
Dysenterie	Dysentery	—	—	—	8	—	—	—	—	—	0	0	0	4	1	0	1	2	0
Fièvres typhoïde et paratyphoïde	Enteric fever	—	—	—	15	—	—	—	—	—	0	3	3	5	3	1	0	0	0
Scarlatine	Scarlet fever	—	—	—	0	—	—	—	—	—	0	0	0	0	0	0	0	0	0
Tuberculose, toutes formes	Tuberculosis, all forms	—	—	—	54	—	—	—	—	—	3	8	8	13	6	8	2	6	2
Variole	Smallpox	—	—	—	4	—	—	—	—	—	0	3	0	0	0	0	1	0	0

* Choléri forme. — Choleraic.
** Période du 17 mai au 26 décembre. — Period from May 17th to December 26th.

CHYPRE — CYPRUS

(Population : 326 250. E. 31. XII. 1924.)

Sources: Rapport médical annuel, 1921-1924. — Annual Medical Report, 1921-1924.
Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Diphtérie	Diphtheria	C.	1	7	8	5	12	0	0	0	0	0	0	0	4	1	4	2	1
		D.	—	—	—	3	5	0	0	0	0	0	0	0	0	0	4	1	0
Grippe	Influenza	C.	3507	4169	2625	5866	193	0	0	0	0	0	28	14	12	20	34	31	54
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	27	7	4	9	6	2	1	1	0	1	0	0	0	0	0	0	1
		D.	—	—	—	8	2	1	0	0	0	0	0	0	0	0	0	0	1
Scarlatine	Scarlet fever	C.	—	—	—	9	1	0	0	0	0	0	0	0	0	0	0	1	0
		D.	—	—	—	—	0	0	0	0	0	0	0	0	0	0	0	0	0
Varicelle	Chickenpox	C.	—	—	—	46	21	0	0	0	0	0	0	0	0	0	0	10	11
		D.	—	—	—	—	0	0	0	0	0	0	0	0	0	0	0	0	0

	Dysenterie Dysentery	Fièvre typhoïde Enteric fever	Paludisme Malaria	Trachome Trachoma	Tuberculose pulmonaire Pulmonary Tuberculosis	Variole Smallpox
1919. . . .	538	439	1962	465	130	242
1920. . . .	769	395	3706	334	95	17
1921. . . .	827	360	4291	185	99	8
1922. . . .	798	346	4008	227	108	86
1923. . . .	570	314	5063	300	132	1
1924. . . .	—	200	5010	393	179	0

CORÉE — KOREA *(Chosen)*

(Population: 19 519 227. R. 1 oct. 1925.)

Source: Rapports du Gouvernement général de Corée au Bureau de la Statistique générale du Cabinet impérial. — Reports of th Government-General of Chosen to the Bureau of Statistics of the Imperial Cabinet.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Choléra asiatiq.	Asiatic cholera	C.	1	40	0	0	6	0	0	0	0	0	0	0	0	0	6	0	0
		D.	1	23	0	0	5	0	0	0	0	0	0	0	0	0	5	0	0
Diphtérie	Diphtheria	C.	238	265	420	523	513	63	68	79	55	48	21	19	14	22	32	51	41
		D.	93	101	141	185	203	19	28	36	19	20	9	6	5	4	10	25	22
Dysenterie	Dysentery	C.	978	1932	1195	1443	2030	2	9	2	9	97	274	503	569	317	158	79	11
		D.	311	529	296	386	488	2	4	1	2	17	48	98	125	94	61	28	8
Fièvre para-typhoïde	Paratyphoid fever	C.	300	473	314	301	474	24	30	11	7	35	66	54	72	66	60	23	26
		D.	33	52	30	16	66	5	3	0	0	5	7	11	10	5	9	5	6
Fièvre typhoïde	Typhoid fever	C.	2535	3801	2839	3273	5006	189	222	157	238	411	559	554	637	583	613	514	329
		D.	485	768	541	567	906	28	45	38	39	58	74	82	130	98	109	113	92
Méningite cerebro-spin.	Cerebro-spinal meningitis	C.	0	0	0	0	17	3	1	3	1	2	0	0	2	0	2	0	3
		D.	0	0	0	0	11	0	0	3	1	2	0	0	1	0	1	0	3
Scarlatine	Scarlet fever	C.	717	585	1008	1361	734	67	67	70	61	124	81	34	27	26	56	62	59
		D.	209	139	242	341	158	13	14	13	21	38	14	8	8	4	8	12	5
Typhus exanthém.	Typhus	C.	73	63	27	540	225	14	38	12	51	52	29	10	1	4	4	3	7
		D.	18	20	6	94	34	4	7	3	2	8	6	2	0	0	0	0	2
Variole	Smallpox	C.	8316	3676	3722	439	699	62	104	173	141	110	41	49	4	4	3	3	5
		D.	2527	1160	1120	85	170	15	20	43	37	28	10	14	1	0	0	0	2

ÉTABLISSEMENTS DES DÉTROITS — STRAITS SETTLEMENTS

(Population: 960 950. E. 1924.)

Sources: Annual Report of the Medical Department, 1919-1924.
Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease			Total 1919	Total 1920	Total 1921	Total 1922	Total 1923	Total 1924
Béribéri	Beri-beri	D.	1430	1025	1299	1388	904	910
Choléra asiatique	Asiatic cholera	C.	94	58	6	3	0	12
		D.	71	37	4	2	0	7
Diphtérie	Diphtheria	D.	11	25	13	13	10	7
Dysenterie	Dysentery	D.	1209	1085	1090	1085	839	842
Fièvre typhoïde	Enteric fever	D.	94	103	117	53	52	54
Grippe	Influenza	D.	—	362	207	234	162	162
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	—	29	86	85	20	20
		D.	—	22	54	45	14	11
Paludisme	Malaria	D.	4843	4690	4713	3977	3430	3462
Peste	Plague	C.	19	61	27	39	59	21
		D.	16	55	27	39	55	19
Pneumonie	Pneumonia	D.	—	1966	1230	1608	1710	1669
Tuberculose	Tuberculosis	D.	3112	3336	3258	2966	2683	2389
Variole	Smallpox	C.	480	105	155	330	36	12
		D.	166	43	37	80	3	3

ETABLISSEMENTS DES DÉTROITS — STRAITS SETTLEMENTS

SINGAPOUR, PENANG ET MALACCA — SINGAPORE, PENANG, MALACCA

(Population : 809 750. E. 1924.)

Sources : Annual Report on the Medical Department, 1924.
Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease			Total 1923	Total 1924	Total 1925	1925 Période de quatre semaines se terminant le: — Four-week period ending: Janv. Jan. 24	Fév. Feb. 21	Mars March 21	Avril April 18	Mai May 16	Juin June 13	Juillet July 11	Août Aug. 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Dec. 26	1926 Janv. Jan. 2*
Béribéri	Beri-beri	D.	813	845	890	54	55	57	57	67	60	74	67	58	79	94	80	72	16
Choléra asiatique	Asiatic cholera	C.	0	12	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
		D.	0	7	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Diphtérie	Diphtheria	D.	10	6	22	2	2	1	2	1	0	2	2	2	3	1	2	1	1
Dysenterie	Dysentery	D.	737	689	665	54	34	21	57	46	57	56	70	35	60	63	47	53	12
Fièvre typhoïde	Enteric fever	D.	48	46	97	7	7	9	6	9	7	6	3	10	8	3	13	8	1
Grippe	Influenza	D.	161	157	153	15	10	6	8	13	17	8	8	17	7	12	13	15	4
Méningite cérébro-spin.	Cerebro-spin. meningitis	C.	19	18	12	0	0	2	2	4	3	0	1	0	0	0	0	0	0
		D.	11	10	27	0	1	5	5	9	6	0	1	0	0	0	0	0	0
Paludisme	Malaria	D.	1367	1089	1773	67	82	79	110	149	178	144	119	136	143	176	181	163	46
Peste	Plague	C.	59	21	55	2	5	10	11	13	2	1	2	0	0	0	7	2	0
		D.	55	19	47	2	5	9	8	9	2	1	2	0	0	0	7	2	0
Pneumonie	Pneumonia	D.	1562	1625	1916	126	64	112	151	171	183	142	141	154	150	158	159	173	32
Tuberculose pulmonaire	Pulmonary tuberculosis	D.	2123	2042	2119	170	157	139	83	170	185	154	153	160	156	186	189	180	37
Variole	Smallpox	C.	27	10	11	0	2	3	2	1	0	1	0	0	0	0	1	1	0
		D.	2	3	9	0	0	4	0	2	0	1	0	0	0	0	1	0	1

* Une semaine seulement. — One week only.

ETABLISSEMENTS DES DÉTROITS — STRAITS SETTLEMENTS

Province de Wellesley, territoire de Malacca (la ville non comprise) et Labuan
Wellesley Province, Malacca Territory (excluding City) and Labuan

(Population : 307 300. E. 1924.)

Source : Rapports du Ministère britannique de Santé. — Reports from the British Ministry of Health.

Maladie — Disease			Total 1924	Total 1925	1925 28 déc.-31 janv. *	29 mars-25 avril	26 avril-30 mai *	31 mai-27 juin	28 juin-25 juill.	26 juill.-29 août *	30 août-26 sept.	27 sept.-31 oct. *	nov. 1-28 Nov	29 nov.-26 déc.
Béribéri	Beri-beri	C.	63	75	13	4	5	3	2	7	1	9	7	9	10	5
Diphtérie	Diphtheria	C.	0	1	0	0	0	1	0	0	0	0	0	0	0	0
		D.	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Dysenterie	Dysentery	D.	73	79	3	13	8	5	9	5	4	1	6	11	6	8
Fièvre typhoïde	Enteric fever	D.	1	3	0	0	0	1	0	0	1	0	0	0	0	1
Grippe	Influenza	D.	7	7	0	0	1	0	1	1	0	0	1	1	1	1
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	1	1	0	0	0	0	0	0	0	1	0	0	0	0
		D.	1	1	0	0	0	0	0	0	0	1	0	0	0	0
Paludisme	Malaria	D.	2030	2176	184	183	161	151	231	167	195	191	154	210	169	180
Pneumonie	Pneumonia	D.	45	40	1	1	1	3	6	7	3	2	3	6	5	2
Tuberculose pulmonaire	Pulmonary tuberculosis	D.	419	376	23	24	42	28	30	25	25	40	29	37	39	34

* Cinq semaines — Five weeks.

ETABLISSEMENTS FRANCAIS DE L'INDE — FRENCH SETTLEMENTS IN INDIA

(Population : 269 579. R. 1. VII. 1921.)

Source : Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies. Compte-rendu des maladies pestilentielles.

Maladie — Disease			1925 Total	Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Choléra asiatique	Asiatic cholera	C.	1335	§§	§§	—	56	29	13	176	29	§§	§§	90	942
		D.	1362	95	196	—	37	22	11	52	26	50	30	73	770
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	61	7	3	—	2	4	14	—	13	9	7	2	—
		D.	41	2	3	—	0	2	4	—	12	9	7	2	—
Lèpre	Leprosy	C.	3	0	0	—	1	0	0	0	0	§	2	0	0
		D.	3	0	0	—	0	0	0	0	0	3	0	0	0
Rougeole	Measles	C.	3	0	0	—	0	1	0	0	0	0	2	0	0
		D.	2	0	0	—	0	0	0	0	0	0	2	0	0
Variole	Smallpox	C.	491	§	§§	—	126	80	91	§§	67	§§	§§	127	§§
		D.	830	20	45	—	106	64	62	67	54	103	120	83	106

§ Quelques cas. — A few cases.
§§ De nombreux cas. — Numerous cases.
Note. Les données sont incomplètes. — Data are incomplete.

ÉTAT DU GRAND LIBAN — GRAND LEBANON

(Population: 569 780. R. 1922).

BEYROUTH — BEIRUT. (Population: 91 500. R. 1922.)

Source: Annuaire médical.

Année Year	Affections puerpérales Puerperal affections	Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite léthar. Encephalitis lethar.	Fièvre typhoïde Enteric fever	Grippes compliquées Influenza, with complications	Lèpre Leprosy	Méningite cérébro-spinale Cerebro-spinal meningitis	Ophtalmie granuleuse Granular ophthalmia	Peste Plague	Poliomyélite aiguë Acute poliomyelitis	Rougeole Measles	Scarlatine Scarlet fever	Typhus exanth. Typhus	Variole Smallpox
Total 1921	4	0	18	8	107	16	4	8	1	99	0	3	0	27	139
» 1922	4	2	1	7	26	0	0	4	0	27	0	0	0	2	50
» 1923	0	6	14	5	25	0	0	4	0	15	0	33	0	18	3
» 1924	0	4	9	1	20	1	0	0	0	20	0	124	0	0	3
AUTRES TERRITOIRES DU LIBAN — OTHER TERRITORIES OF LEBANON. (Population: 478 280. R. 1922.)															
Total 1921	16	5	90	3	103	51	26	2	105	3	0	9	0	4	145
» 1922	44	19	238	10	188	894	3	9	291	5	7	1666	3	4	101
» 1923	24	3	165	31	366	427	2	5	118	1	0	396	1	3	57
» 1924	24	19	147	120	303	1247	2	7	128	3	3	900	0	2	37

FORMOSE (Taiwan) — FORMOSA

(Population : 3 956 706. E. 1925.)

Source : Rapports du Service de Santé. — Reports from the Health Service.

Maladie — Disease		Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*													
Choléra asiatique	Asiatic cholera	3	0	0	0	0	0	0	0	0	0	3	0	0
Diphtérie	Diphtheria	249	24	16	20	18	20	16	13	11	14	31	35	31
Dysenterie	Dysentery	159	5	5	4	8	13	32	13	20	25	20	9	5
Fièvre paratyphoïde	Paratyphoid fever	80	8	4	1	5	6	8	19	7	2	8	4	8
Fièvre typhoïde	Typhoid fever	624	32	21	21	23	37	87	115	77	73	57	50	31
Méningite cérébro-spinale	Cerebro-spinal meningitis	179	9	13	99	25	5	1	9	4	3	0	6	5
Variole	Smallpox	16	1	0	0	1	0	11	1	0	0	0	1	1

HONG-KONG

(Population: 625 166. R. 24 avril 1921.)

Sources: Rapport sanitaire, 1922; Rapports du Ministère britannique de Santé 1923-1925.
Sanitary Report, 1922; Reports from the British Ministry of Health 1923-1925.

Quinzaine se terminant le: Fortnight ending:	Diphtérie Diphtheria		Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis		Variole Smallpox	
	C.	D.	D.	C.	D.	C.	D.
Total 1919	50	36	449	269	204	27	15
» 1920	76	28	542	158	103	34	21
» 1921	85	38	303	125	73	191	162
» 1922	71	32	422	53	38	212	189
» 1923	91	43	83	107	95	1320	1141
» 1924	90	40	52	81	70	913	795
» 1925	85	31	42	77	50	67	45
Janvier — January 10	14	1	3	3	3	4	2
24	4	2	0	2	2	3	3
Février — February 7	6	1	0	10	0	3	3
21	7	3	0	1	1	2	2
Mars — March 7	4	2	1	4	3	3	3
21	6	3	1	3	2	13	4
Avril — April 4	7	3	1	9	6	9	4
18	5	3	1	7	4	10	11
Mai — May 2	2	2	2	7	6	7	6
16	4	2	3	6	6	3	4
30	3	2	1	1	1	3	2
Juin — June 13	0	0	1	10	6	2	0
27	0	0	3	1	2	0	0
Juillet — July 11	0	0	3	3	3	0	0
25	0	0	6	1	1	1	0
Août — August 8	2	1	1	0	0	0	0
22	0	0	1	1	0	0	0
Septembre — September 5	1	0	1	0	0	0	0
19	1	0	5	0	0	0	0
Octobre — October 3	2	0	0	0	0	0	0
17	4	0	0	1	0	0	0
31	4	1	1	1	2	0	0
Novembre — November 14	4	3	2	2	0	0	0
28	1	1	3	0	0	3	0
Décembre — December 12	0	0	1	2	1	0	1
26	2	1	0	2	1	1	0
* Janvier — January 1926 2	2	0	1	0	0	0	0

* Période d'une semaine seulement. — One-week period only.

	1919		1920		1921		1922		1923		1924		1925	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D
holéra asiatique — Asiatic cholera	46	42	6	6	5	5	1	0	1	1	0	0	2	2
ièvre récurrente — Relapsing fever	0	0	0	0	1	0	5	5	1	0	0	0	0	0
este — Plague	464	426	138	120	150	130	1181	1071	148	136	0	0	0	0
yphus exanth. — Typhus	0	0	3	1	0	0	0	0	1	0	0	0	0	0

INDES BRITANNIQUES — BRITISH INDIA

(Population: 318 942 480. R. 18 mars, 1921.)

Sources: Annual Reports of the Public Health Commissioner with the Government of India, 1919-1922. — Reported Attacks and Deaths from Plague, Cholera and Smallpox in British India and the Indian States.

Semaine se terminant le: Week ending:		Choléra asiatique Asiatic cholera		Peste Plague		Variole Smallpox	
		C.	D.	C.	D.	C.	D.
Total	1919	—	578426	—	98582	—	136077
»	1920	—	130140	—	140259	—	101329
»	1921	—	450608	—	81521	—	40446
»	1922	—	121679	—	102126	—	40836
»	1923	—	73002	—	292982	—	44084
»	1924	—	293707	—	398757	—	55380
»	1925	129364	76043	113397	95422	174660	41179
Janvier —January	10	2569	1467	4306	3463	2532	506
	17	2811	1719	3990	3529	2663	603
	24	3118	1829	4128	3501	2953	643
	31	2769	1621	3631	3013	3131	668
Février — February	7	2061	1249	4055	3300	3771	842
	14	1811	1103	4520	3730	5045	1000
	21	1887	1061	4418	3585	4215	928
	28	2303	1336	4742	3951	5459	1473
Mars — March	7	1998	1119	4751	3835	4992	1100
	14	2045	1175	5830	4861	5813	1407
	21	2001	1171	7177	6195	7670	1876
	28	2063	1113	6527	5824	8625	1857
Avril — April	4	2256	1288	5826	5197	7096	1811
	11	3801	2096	5261	4395	6979	1541
	18	5122	2768	5410	4650	7329	1819
	25	5187	3197	4290	3828	6780	1670
Mai — May	2	5519	3163	3858	3359	6760	1727
	9	6104	3398	1952	1672	5125	1233
	16	4699	3102	1162	1012	5246	1307
	23	4335	2788	841	677	4336	1065
	30	3525	2120	880	694	4349	1082
Juin — June	6	3074	1791	217	252	3507	907
	13	2506	1457	857	932	3527	917
	20	2749	1580	188	152	3058	783
	27	2128	1173	214	165	2797	621
Juillet — July	4	1930	1176	176	128	2360	723
	11	2133	1194	211	150	2788	740
	18	1729	1011	225	170	2523	609
	25	2069	1142	204	143	2481	533
Août — August	1	1735	954	286	196	2229	461
	8	1721	875	591	391	1862	448
	15	2042	1138	633	390	2028	434
	22	1848	991	1399	879	1728	361
	29	1824	1044	1291	837	1470	420
Septembre — September	5	1534	929	948	651	1229	261
	12	1643	1189	1532	1131	1175	219
	19	1179	746	1340	935	1067	225
	26	1167	773	1380	960	789	172
Octobre — October	3	1329	738	983	693	1196	247
	10	1394	801	1148	733	1086	289
	17	1171	706	746	524	1042	180
	24	1483	876	1537	987	1164	269
	31	1639	956	1062	721	1181	268
Novembre — November	7	1721	974	1172	782	1182	243
	14	1840	1053	1030	774	1662	362
	21	2301	1391	1164	696	1878	349
	28	1326	1420	1481	1088	1929	436
Décembre — December	5	2770	1628	1275	902	2312	466
	12	2358	1371	1271	968	2546	556
	19	3122	1758	1941	1429	2946	775
	26	3189	1814	1425	1053	3079	767
1926 Janvier — January	2	2726	1513	1883	1339	3970	980

INDES BRITANNIQUES — BRITISH INDIA

(Population: 318 942 480. R. 18 mars 1921.)

Sources: Annual Reports of the Public Health Commissioner with the Government of India, 1919-1922; Quarterly Reports for Births and Deaths, 1923-1925.

Province	Décès — Deaths															Province
	Choléra asiatique — Asiatic cholera					Peste — Plague					Variole — Smallpox					
	1921	1922	1923	1924	1925	1921	1922	1923	1924	1925	1921	1922	1923	1924	1925	
Provinces britann.																*British Provinces*
Ajmer-Merwara . .	35	2	9	32	—	0	2	5	1	—	724	8	42	619	—	Ajmer-Merwara
Assam	12829	16219	3728	19182	1941	0	0	—	—	0	2774	2610	3213	1647	792	Assam
Bihar et Orissa . .	90688	26805	8198	77480	11543	16504	15066	28911	10792	4751	7836	2560	3161	6932	8836	Bihar and Orissa
Birmanie	3791	5047	1488	8083	1262	4403	7282	7606	5491	3779	987	1439	2846	2501	2527	Burma
Courg	0	4	—	24	—	1	8	—	3	—	6	1	18	69	—	Coorg
Pendjab	19215	128	11	3351	2517	2553	7780	50086	251261	25819	4575	1608	2140	4040	3646	Punjab
Présid. du Bengale .	80547	51712	41483	48514	12512	59	150	98	35	9	8157	7864	4236	5567	8917	Bengal Presidency
Présid. de Bombay .	3521	2768	9221	8236	57	4672	8379	33741	9214	8402	1771	1170	2811	11152	4559	Bombay Presidency
Présidence de Madras	27064	16502	5169	51971	30009	11875	9193	12110	3922	1888	9792	22801	24434	18810	5597	Madras Presidency
Provinces Centrales	58331	64	1090	9704	116	5467	6149	15867	11081	4909	1787	407	275	978	2358	Central Provinces
Province de Delhi .	635	6	12	121	37	1	191	2795	2436	80	22	22	67	129	0	Delhi Province
Provinces frontières du Nord-Ouest. .	4285	92	2	9	92	138	124	3743	11397	301	576	104	94	212	530	North-West Frontier Provinces
Provinces Unies . .	149667	2330	2591	67000	4254	24009	23291	74187	56210	32909	1439	242	747	2724	1568	United Provinces
Total .	450608	121679	73002	293707	64340	69682	77615	229149	361843	82847	40446	40836	44084	55380	41107	Total
Agences et Etats indiens:																*Indian States and Agencies:*
Etat d'Haiderabad .	1381	3283	1174	3354	17	1294	12107	45407	19805	4818	—	—	—	247	418	Hyderabad State
Etat de Mysore . .	25	46	79	7699	0	8244	8945	10985	3618	2641	—	1149	—	—	29	Mysore State
Autres agences et Etats indiens . .	7829	—	71	2051	11606*	2301	3450	7446	13491	4830	—	67	131	2031	337	Other Indian States and Agencies
Total .	9235	3329	1324	13104	11623	11839	24511	63838	36914	12289	—	1216	131	2278	784	Total
Total pour les Indes	459843	125008	74326	306811	75963	81521	102126	292987	398757	95136	40446	42052	44215	57658	41891	Total for India

dont 11504 dans le Cachemire. — of which 11504 reported in Kashmir Province.

INDES NÉERLANDAISES — DUTCH EAST INDIES

Source: Rapports périodiques du Service médical civil, Weltevreden — Current Reports from Civil Medical Service, Weltevreden.

Maladie — Disease			Total 1924	Total 1925	1925 Période de quatre semaines se terminant le: — Four-week period ending: Janv. Jan. 28	Févr. Feb. 25	Mars March 25	Avril April 22	Mai May 20	Juin June 17	Juill. July 15	Août Aug. 12	Sept. Sept. 9	Oct. Oct. 7	Nov. Nov. 4	Déc. Dec. 2	Déc Dec. 30
Java et Madoura — Java and Madura (Population: 35 438 981. R. Déc. 1924)																	
Diphtérie	Diphtheria	C.	341	440	40	20	14	12	18	35	30	42	45	33	45	46	60
		D.	33	50	3	2	3	2	3	7	2	5	2	5	8	5	3
Dysenterie bacillaire	Dysentery, bacillary	C.	4592	1944	347	110	40	21	62	41	24	12	60	162	163	255	647
		D.	1405	416	62	32	9	1	17	5	3	3	6	43	36	40	159
Fièvre typhoïde	Enteric fever	C.	1401	1707	113	104	96	80	114	100	151	127	109	180	178	171	184
		D.	226	256	13	17	24	12	21	15	19	16	15	14	34	32	24
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	21	11	0	0	0	2	3	1	0	1	0	0	1	3	0
		D.	9	7	0	0	0	2	0	1	0	1	0	0	1	2	0
Peste	Plague	D.	13078	14408	2115	1560	1233	947	720	448	461	795	1330	1353	1174	981	1291
Variole	Smallpox	C.	5994	4652	387	393	219	179	145	153	198	530	725	917	352	240	214
		D.	1301	508	55	48	35	29	17	20	20	37	67	67	41	28	44
Principaux ports de Java. — Principal Ports in Java (Population: 825 000. E. 1920)																	
Dysenterie bacillaire	Dysentery, bacillary	C.	279	77	4	4	5	7	5	4	5	4	4	3	7	9	16
		D.	15	19	1	1	2	1	0	2	2	1	1	0	1	3	4
Fièvre typhoïde	Enteric fever	C.	574	624	58	39	47	31	43	44	47	47	33	66	40	46	83
		D.	101	112	7	4	8	7	10	8	10	6	5	9	13	6	19
Grippe	Influenza	C.	248	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	15	8	0	0	2	3	0	1	0	0	0	0	2	0	0
		D.	6	6	0	0	0	3	0	2	0	0	0	0	1	0	0
Peste	Plague	C.	60	85	20	19	21	7	2	0	2	3	4	2	3	1	1
		D.	56	83	20	19	21	7	2	0	2	3	4	1	2	1	1
Variole	Smallpox	C.	848	112	16	8	7	1	4	2	11	3	9	12	6	7	26
		D.	499	42	7	4	3	1	2	1	2	0	1	4	4	4	9
Principaux ports des autres iles — Principal Ports in Other Islands (Population: 350 000. E. 1920)																	
Dysenterie bacillaire	Dysentery, bacillary	C.	82	119	9	7	9	1	8	7	16	7	9	12	11	10	13
		D.	0	16	2	1	5	0	0	1	0	1	0	1	1	0	4
Fièvre typhoïde	Enteric fever	C.	165	112	8	5	5	6	1	12	15	10	13	11	7	9	10
		D.	8	14	0	0	1	1	1	1	3	2	1	2	1	0	1
Grippe	Influenza	C.	207	282	18	73	26	35	12	5	11	31	43	14	8	2	4
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	6	5	0	0	2	0	0	0	0	0	0	0	1	0	2
		D.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peste	Plague	C.	41	11	4	0	0	0	0	0	0	0	1	0	0	1	5
		D.	37	8	3	0	0	0	0	0	0	0	0	0	0	1	4
Variole	Smallpox	C.	776	23	0	0	1	1	1	0	4	1	5	2	2	0	6
		D.	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INDO-CHINE — INDO-CHINA

ANNAM (Population: 5 105 040. R. 1er juill. 1921).

Source: Rapports du ministère français des Colonies — Reports from the French Ministry of Colonies.

Maladie — Disease			Total	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Choléra	Cholera	C.	48	0	—	0	0	0	46	0	0	2	0	0	0
		D.	6	0	2	0	0	0	2	0	0	2	0	0	0
Diphtérie	Diphtheria	C.	8	0	0	0	0	0	0	4	1	1	1	[0	1
Dysenterie	Dysentery	C.	231 §§	—	—	—	46	47	35	§§	33	17	24	29	—
		D.	44	—	—	—	10	10	3	20	1	0	0	0	—
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	11	1	1	0	1	0	3	0	2	0	1	0	2
		D.	1	0	0	0	0	0	0	0	0	0	1	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	12 §	0	0	0	3	4	§	1	1	0	2	1	0
		D.	5	0	0	0	1	3	0	0	0	0	1	0	0
Peste	Plague	C.	85	5	—	18	23	21	10	8	0	0	0	0	0
		D.	32	3	1	0	20	—	—	8	0	0	0	0	0
Rougeole	Measles	C.	26 §§	2	0	§§	6	3	0	8	1	7	1	0	0
		D.	8		0	0	0	0	0	8	0	0	0	0	0
Variole	Smallpox	C.	1496	162	589	584	390	157	30	—	24	47	43	54	—
		D.	276	16	56	74	57	35	2	—	8	9	14	5	—

COCHIN-CHINE — COCHIN-CHINA (Population: 3 928 190. R. 1er juill. 1921).

Choléra asiatique	Asiatic cholera	C.	66	5	4	2	14	8	13	6	5	5	2	0	2
		D.	39	1	3	2	7	5	8	2	4	3	2	0	2
Diphtérie	Diphtheria	C.	14	2	—	3	1	—	—	3	—	—	3	—	2
		D.	2	0	—	0	0	—	—	0	—	—	2	—	0
Dysenterie	Dysentery	C.	5940	300	354	467	402	435	504	573	659	637	451	927	231
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	51	2	1	1	2	0	4	5	6	12	4	4	10
		D.	8	2	0	1	1	0	0	0	0	1	0	0	3
Lèpre	Leprosy	C.	15	2	2	0	0	1	2	1	1	2	1	1	2
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	18	2	3	1	0	0	11	0	0	0	0	0	1
Peste	Plague	C.	30	3	0	0	1	5	11	0	0	6	3	0	1
		D.	23	2	0	0	1	3	9	0	0	5	2	0	1
Rougeole	Measles	C.	248	19	22	32	32	2	10	—	—	—	—	1	130
Scarlatine	Scarlet fever	C.	4	—	—	1	—	—	—	—	3	—	—	—	—
Variole	Smallpox	C.	658	75	113	126	104	64	27	12	40	24	28	31	14
		D.	237	14	48	33	35	24	9	7	16	16	14	17	4

CAMBODGE — CAMBODIA (Population: 2 402 585. R. 1er juill. 1921).

Choléra asiatique	Asiatic cholera	C.	91	5	0	1	15	60	6	2	1	0	0	0	1
		D.	43	1	0	0	13	22	6	0	1	0	0	0	0
Dysenterie	Dysentery	C.	21	—	—	—	—	—	—	20	—	—	—	1	—
Lèpre	Leprosy	C.	3	0	0	2	0	0	0	0	0	0	0	1	0
		D.	1	0	0	0	0	0	0	0	0	0	0	1	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	24	0	0	3	0	7	5	5	0	1	2	0	1
		D.	9	0	0	0	0	3	4	0	0	0	2	0	0
Peste	Plague	C.	214	17	26	32	49	26	14	16	16	11	5	2	0
		D.	193	17	24	32	43	26	12	13	8	11	5	2	0
Rougeole	Measles	C.	191	2	9	59	32	26	6	8	6	0	14	5	24
		D.	85	0	3	32	28	13	1	8	0	0	0	0	0
Trypanosomiase	Trypanosomiasis	C.	6	0	0	0	1	1	1	0	0	1	1	0	1
		D.	4	0	0	0	1	1	0	0	0	1	1	0	0
Variole	Smallpox	C.	380	48	45	43	36	29	30	62	53	29	2	1	2
		D.	139	43	19	9	15	4	9	18	11	8	1	1	1

LAOS (Population: 818 750. R. 1er juill. 1921).

Choléra asiatique	Asiatic cholera	C.	1	0	0	0	0	0	0	1	0	0	0	0	0
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0
Dysenterie	Dysentery	C.	640	66	55	35	45	86	83	—	64	26	76	62	42
Lèpre	Leprosy	C.	14	0	0	0	0	0	0	0	4	0	9	0	1
Rougeole	Measles	C.	19	—	3	4	2	2	1	—	1	4	2	0	0
Variole	Smallpox	C.	16 §	—	§§	9	2	1	4	—	0	0	0	0	§

TONKIN (Population: 7 115 590. R. 1er juill. 1921).

Choléra asiatique	Asiatic cholera	C.	26	0	0	0	2	9	9	3	0	2	0	1	0
		D.	8	0	0	0	0	3	4	1	0	0	0	0	0
Diphtérie	Dyphtheria	C.	4	1	0	0	0	1	0	0	1	0	0	1	0
		D.	5	1	0	0	0	1	0	0	1	2	0	0	0
Dysenterie	Dysentery	C.	220	9	10	3	7	48	69	0	40	32	0	1	1
		D	13	2	2	0	0	5	1	0	0	3	0	0	0
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	87	1	4	3	8	12	0	0	12	16	8	8	15
		D.	19	0	1	1	3	2	0	0	3	2	2	1	4
Lèpre	Leprosy	C.	102	10	5	3	7	8	15	—	13	12	9	15	5
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	65	3	7	25	4	6	4	0	2	4	5	5	§
		D.	8	0	0	2	3	0	0	0	1	0	0	0	2
Rougeole	Measles	C.	251	46	44	56	32	59	7	0	1	0	3	0	3
		D.	4	2	0	0	2	0	0	0	0	0	0	0	0
Variole	Smallpox	C.	2203	304	540	520	324	221	104	31	13	18	4	50	74
		D.	123	30	34	28	16	7	1	3	1	—	1	1	1

§ Quelques cas. — A few Cases.
§§ Nombreux cas. — Numerous Cases.

IRAK (Mésopotamie) — IRAQ (Mesopotamia)

(Population : 2 849 282. R. 1920.)

Sources : Rapport de l'Inspecteur général des Services de Santé pour les années 1923 et 1924. — Report of the Inspector-General of Health Services for the Years 1923 and 1924.
Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease			Total 1922	Total 1923	Total 1924	Total 1925	1925 Périodes de quatre semaines finissant le: — Four-week periods ending: Jan. Jan. 24	Fév. Feb. 21	Mars Mar. 21	Avril April 18	Mai May 16	Juin June 13	Juil. July 11	Août Aug. 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Dec. 26	1926 Janv. Janv. 2*
Diphtérie	Diphtheria	C.	43	27	30	41	0	1	3	5	4	0	5	0	2	4	5	3	8	1
		D.	—	8	9	9	0	0	1	0	0	0	5	0	1	1	0	0	1	0
Fièvre puerpérale	Puerperal fever	C.	39	9	19	10	0	3	0	2	1	0	0	0	2	0	1	0	1	0
		D.	—	6	6	2	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Fièvre typhoïde	Enteric fever	C.	104	158	134	318	4	6	7	7	14	24	15	34	36	50	46	41	29	5
		D.	—	31	29	48	1	0	1	2	1	0	4	9	5	9	4	5	5	2
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	12	13	14	15	1	0	2	2	0	3	4	1	2	0	0	0	0	0
		D.	—	6	7	7	1	0	0	2	0	1	2	1	0	0	0	0	0	0
Oreillons	Mumps	C.	229	58	145	350	9	10	11	14	18	17	25	23	33	52	30	58	39	11
		D.	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0
Peste	Plague	C.	589	787	523	23	1	0	0	2	1	12	0	0	0	0	0	0	4	3
		D.	—	434	309	4	0	0	0	1	0	0	0	0	0	0	0	0	1	2
Rougeole	Measles	C.	87	487	1374	1085	7	139	39	280	14	23	22	40	17	18	69	233	175	9
		D.	—	120	787	195	2	24	1	27	2	8	8	15	11	5	31	26	29	6
Scarlatine	Scarlet fever	C.	7	2	12	25	1	0	0	0	0	5	0	4	7	8	0	0	0	0
		D.	—	0	0	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0
Tétanos	Tetanus	C.	14	9	7	28	1	1	2	4	1	2	1	2	3	3	4	2	2	0
		D.	—	2	3	13	0	1	1	3	1	1	0	0	2	1	1	1	1	0
Tuberculose	Tuberculosis	C.	398	503	819	1029	40	48	81	91	91	120	70	67	84	101	76	70	74	16
		D.	—	52	214	215	22	16	14	18	19	18	20	5	13	12	12	19	24	3
Typhus exanth.	Typhus	C.	48	27	9	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0
		D.	—	4	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Varicelle	Chickenpox	C.	56	26	41	34	2	1	5	13	2	0	1	5	0	1	1	1	2	0
		D.	—	1	4	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Variole	Smallpox	C.	1862	1692	459	883	4	42	38	28	13	50	16	29	47	76	103	76	310	51
		D.	—	581	235	356	2	23	13	4	2	17	2	13	11	39	53	41	111	25

	Charbon Anthrax		Choléra asiatique Asiatic cholera		Dysenterie Dysentery		Erysipèle Erysipelas		Fièvre récurrente Relapsing fever		Lèpre Leprosy	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
1922	6	—	0	0	—	—	—	—	—	—	42	—
1923	11	1	1640	1100	9	1	2	0	1	0	25	0
1924	4	2	0	0	0	0	0	0	0	0	22	1
1925	10	1	0	0	—	—	—	—	0	0	81	3

* Une semaine seulement. — One week only.

JAPON — JAPAN

(Population: 59 736 704. R. 1 octobre 1925.)

Srce : Revue sanitaire du Département de l'Intérieur du Japon. — Sanitary Review of the Home Department of Japan.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Choléra asiatiq.	Asiatic cholera	C.	29	730	4	0	624	0	0	0	0	0	0	0	4	297	226	67	30
		D	16	420	2	0	382	0	0	0	0	0	0	0	2	144	167	48	21
Diphtérie	Diphtheria	C.	14522	13968	12776	13109	13853	1549	1625	1720	1505	1158	930	604	466	584	942	1252	1518
		D.	3501	3254	3111	3175	3369	446	431	452	343	264	208	141	87	122	192	286	398
Dysenterie	Dysentery	C.	12445	14899	20270	18624	14773	151	125	201	295	473	1250	3013	3477	3035	1669	662	362
		D.	2941	3831	7372	7230	6645	86	57	76	134	239	535	1301	1541	1347	732	396	200
Fièvre para-typhoïde	Paratyphoid fever	C.	6291	7150	5317	5378	5064	122	94	87	127	218	524	546	814	1135	728	401	268
		D.	802	852	690	634	453	15	19	16	18	17	29	34	60	84	70	48	43
Fièvre typhoïde	Typhoid fever	C.	50113	52381	52636	58354	45768	2898	2212	1980	1887	2296	3517	4410	6196	7368	5916	3992	3096
		D.	10634	11082	16371	16643	9085	560	572	548	405	440	580	712	1012	1215	1206	985	848
Méningite cérébro-spin.	Cerebro-spinal meningitis	C.	772	933	708	1552	445	31	35	54	82	55	39	27	31	39	23	13	16
		D.	889	531	374	1005	273	14	24	19	42	44	26	18	16	27	13	17	13
Peste	Plague	C.	2	118	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	0	79	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	C.	1589	1654	1562	1843	2572	170	160	195	282	279	268	220	84	123	178	293	320
		D.	82	96	88	121	279	19	14	20	35	33	22	25	19	13	12	33	34
Typhus exanth.	Typhus	C.	171	23	14	14	28	0	1	0	0	0	8	19	0	0	0	0	0
		D.	22	5	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Variole	Smallpox	C.	889	673	1922	1702	430	2	10	26	63	188	91	32	9	2	0	2	5
		D.	212	125	381	266	81	1	0	6	14	22	23	9	4	1	0	1	0

KOUANG-TCHEOU-WAN — KWANG-CHOW-WAN

(Population: 207 652. E. 1922.)

Sources: Rapports du Ministère français des Colonies. — Reports from the French Ministry of Colonies. Compte-rendu des maladies pestilentielles.

Maladie — Disease			Total 1925	1925										
				Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Dysenterie	Dysentery	C.	131	6	6	4	10	9	6	22	12	8	10	29	9
		D.	2										1	1	0
Peste	Plague	C.	196	20	20	25	40	123	46	22	0	0	0	0	0
		D.	207	10	19	16	37	82	28	15	0	0	0	0	0
Variole	Smallpox	C.	22	3	0	8	0	9	0	2	0	0	0	0	0
		D.	2	0	0	2	0	0	0	0	0	0	0	0	0
Lèpre	Leprosy	C.	29	0	3	2	6	6	3	0	4	0	0	5	0

KOUANG-TOUNG — KWANTUNG

(Population : 757 806. E. 1925.)

Source : Rapports du Bureau sanitaire. — Reports from the Sanitary Office.

Maladie — Disease		Total 1923	Total 1924	Total 1925	1925										
					Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*														
Diphtérie	Diphtheria	127	79	115	8	14	9	12	4	2	5	7	17	13	8	16
Dysenterie	Dysentery	377	333	333	9	14	9	10	6	17	72	56	86	40	7	7
Fièvre récurrente	Relapsing fever	53	7	2	0	0	0	1	0	0	1	0	0	0	0	0
Fièvre paratyphoïde	Paratyphoid fever	64	46	39	1	1	1	2	0	5	3	1	7	5	5	8
Fièvre typhoïde	Typhoid fever	299	296	275	20	15	6	12	9	14	18	25	30	40	43	43
Méningite cérébro-spinale	Cerebro-spinal meningitis	27	49	24	2	3	5	4	4	2	0	0	1	1	0	2
Scarlatine	Scarlet fever	233	192	477	15	23	30	40	40	26	10	14	39	26	62	152
Typhus exanthémat.	Typhus	16	1	9	0	0	1	2	0	0	1	2	2	0	1	1
Variole	Smallpox	42	59	271	1	3	16	70	71	12	6	1	4	7	36	44

MALAISIE FÉDÉRÉE — FEDERATED MALAY STATES

(Population : 1 418 450. E. 30 juin 1924.)

Sources : Annual Report on the Medical Department, 1923-1924.
Rapports du Ministère britannique de Santé, 1925. — Reports from the British Ministry of Health, 1925.

Maladie — Disease			Total 1923	Total 1924	Total 1925	1925											
						Période de quatre semaines se terminant le: — Four-week period ending:											
						24 Janv. Jan.	21 Fév. Feb.	21 Mars March	18 Avril April	16 Mai May	13 Juin June	11 Juillet July	8 Août Aug.	5 Sept. Sept.	3 Oct. Oct.	31 Oct. Oct.	28 Nov. Nov.	26 Déc. Dec.	27 Déc. 2 janv. *
Choléra asiatique	Asiatic cholera	C.	0	4	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		D.	0	4	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Typhus exanthématique	Typhus	C.	0	11	12	3	2	6	0	1	0	0	0	0	0	0	0	0	0
		D.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Variole	Smallpox	C.	32	6	51	3	3	0	12	33	0	0	0	0	0	0	0	0	0
		D.	9	1	7	0	0	0	2	5	0	0	0	0	0	0	0	0	0

	Béribéri Beri-beri	Diphtérie Diphtheria	Dysenterie et diarrhée Dysentery and diarrhœa	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Paludisme Malaria	Peste Plague		Pneumonie Pneumonia	Tuberculo pulmonair Pulmonar tuberculos
	D.	D.	D.	D.	D.	D.	D.	C.	D.	D.	D.
1919	939	—	3712	—	—	—	16975	—	—	—	2445
1920	431	—	3804	—	—	—	20595	—	—	—	2634
1921	422	—	2999	—	51	—	17168	—	—	—	2255
1922	443	12	2419	—	46	16	15570	1	1	1780	2393
1923	378	8	2142	29	80	19	15516	16	10	1619	1934
1924	453	17	1961	40	61	3	14283	0	0	1688	1916
1925	—	—	—	—	340	—	—	—	—	—	—

* Données pour une semaine seulement. — Data for one week only.

MALAISIE (non fédérée) — MALAY STATES (Unfederated)

JOHORE

(Population: 1 149 395. R. 24 avril 1921.)

Source: Rapports du Ministère britannique de Santé. — Reports from the British Ministry of Health.

Cause de décès / Cause of Death	Total 1922	Total 1923	Total 1924	Total 1925	1925 — Période de quatre semaines se terminant le: — Four-week period ending: Janv. Jan. 24	Fév. Feb. 21	Mars March 21	Avril April 18	Mai May 16	Juin June 13	Juillet July 11	Août August 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Dec. 26	Déc.* 27 Jan.2
Dysenterie Dysentery	174	156	148	138	9	8	8	11	8	10	10	12	17	5	15	9	9	7
Grippe Influenza	72	24	4	10	0	0	0	0	1	2	0	0	3	0	1	1	2	0
Pneumonie Pneumonia	—	204	236	269	26	19	19	12	20	23	11	18	19	20	16	37	22	7

* Une semaine seulement. — One week only.

			1922	1923	1924				1922	1923	1924
Ankylostomiase	Ankylostomiasis	C.	1276	1486	1798	Peste	Plague	C.	0	4	3
		D.	36	52	68			D.	0	3	3
Béribéri	Beri-beri	C.	749	364	916	Pneumonie grippale	Influenzal pneum.	C.	—	21	6
		D.	318	83	92			D.	—	3	4
Fièvre hématurique	Blackwater fever	C.	7	16	3	Rougeole	Measles	C.	32	46	205
		D.	1	8	1			D.	0	1	1
Fièvre paludéenne	Malarial fever	D.	3821	3687	3384	Tuberculose pulmonaire	Phthisis	C.	408	501	756
Fièvre typhoïde	Enteric fever	C.	6	10	58			D.	192	207	172
		D.	4	8	16	Varicelle	Chickenpox	C.	16	7	29
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	23	9	2	Variole	Smallpox	C.	87	1	8
		D.	20	6	2			D.	6	0	0

KEDAH

(Population: 338 554. R. 1921.)

Source: Rapports du Ministère britannique de Santé. — Reports from the British Ministry of Health.

Maladie — Disease			Total 1923	Total 1924	Total 1925	1925 — Période de quatre semaines finissant le — Four-week period ending: Janv. Jan. 24	Févr. Feb. 21	Mars March 21	Avril April 18	Mai May 16	Juin June 13	Juill. July 11	Août Aug. 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Dec. 26	Déc.* 27 Jan. 2
Dysenterie	Dysentery	D.	155	217	175	19	13	9	3	7	7	9	12	10	15	14	24	27	6
Pneumonie	Pneumonia	D.	100	127	135	9	5	7	3	8	6	19	5	18	16	16	13	9	1

* Une semaine seulement. — One week only.

	Grippe Influenza	Poliomyélite aiguë Acute poliomyelitis	Typhus exanth. Typhus		Variole Smallpox	
	D.	D.	C.	D.	C.	D.
1923	2	0	0	0	3	0
1924	2	0	1	1	23	3
1925	0	1	1	0	0	0

KELANTAN

(Population: 309 293. R. 1921.)

	Choléra asiatique Asiatic cholera		Dysenterie Dysentery	Pneumonie Pneumonia	Typhus exanthém. Typhus		Variole Smallpox	
	C.	D.	D.	D.	C.	D.	C.	D.
1923	29	24	2	12	2	2	2	0
1924	1	1	1	22	0	0	0	0
1925	8	4	3	19	0	0	2	0

PALESTINE

(Population: 757 182. R. 23 oct. 1922.)

Source: Rapports du Service de Santé. — Reports from the Department of Health.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Febr.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Diphtérie	Diphtheria	C.	35	83	39	24	40	2	0	1	1	3	0	5	2	2	7	8	9
		D.	1	7	7	1	10	1	1	0	0	0	0	1	1	0	4	0	2
Dysenterie	Dysentery	C.	100	129	234	726	1002	16	9	14	46	124	108	84	93	106	118	158	126
		D.	6	11	16	27	42	0	1	1	3	6	5	2	9	2	7	4	2
Fièvre récurrente	Relaps. fever	C.	51	25	8	11	22	0	0	1	3	2	2	1	4	2	1	3	3
Fièvre paratyph.	Paratyph.fever	C.	91	63	77	30													
		D.	3	5	8	3	785	12	34	22	12	40	59	88	68	111	125	123	91
Fièvre typhoïde	Typhoid fever	C.	368	208	202	299	76	2	3	2	1	2	3	7	10	12	15	8	11
		D.	34	32	17	32													
Grippe	Influenza	C.	2381	209	275	861	611	337	92	97	29	12	6	0	1	1	0	5	31
		D.	196	44	15	26	26	11	6	4	4	0	0	0	1	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	15	23	5	3	4	0	0	1	0	1	1	0	0	0	0	1	0
		D.	10	19	4	2	3	0	0	1	0	1	0	0	0	0	0	1	0
Peste	Plague	C.	4	64	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	1	19	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Pneumonie	Pneumonia	C.	705	626	1860	702	802	101	81	94	59	63	82	62	46	51	45	60	58
		D.	366	313	505	442	575	78	48	63	42	41	61	54	41	44	28	40	35
Poliomyélite	Poliomyelitis	C.	0	0	1	6	15	5	3	1	1	1	0	2	1	0	1	0	0
		D.	0	0	0	0	6	5	0	0	1	0	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	C.	115	83	13	7	50	1	0	1	4	1	3	10	10	7	3	3	7
		D.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Typhus exanth.	Typhus	C.	63	33	35	37	47	1	1	1	1	7	6	9	2	6	9	2	2
		D.	6	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Variole	Smallpox	C.	2	159	9	23	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	2	16	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0

	Coqueluche Whooping-cough		Encéphalite léthar. Encephalitis lethar.		Erysipèle Erysipelas		Fièvre puerpérale Puerperal fever		Leichmaniose Leichmaniosis	Lèpre Leprosy		Oreillons Mumps	Rage humaine Rabies	Rougeole Measles		Rubéole German measles	Schistosomiase Schistosomiasis	Tétanos Tetanus		Ulcère épidémique Epidemic ulcer	Varicelle Chickenpox	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	C.	D.	C.	D.	C.	D.	C.	C.	C.	D.	C.	C.	D.
1921	131	6	0	0	114	9	15	10	0	a34	2	535	5	13	1	6	—	14	7	250	85	0
1922	193	13	0	0	102	9	26	15	0	10	2	175	8	117	10	4	49	13	8	150	80	1
1923	268	18	0	0	114	6	19	8	2	10	2	265	13	6936	1232	1	26	26	20	396	140	0
1924	883	63	1	0	99	7	32	23	10	20	1	48	9	5997	824	2	32	26	20	516	250	0

a Nombre de lépreux existant en 1921. — Number of lepers living in 1921.

ILES PHILIPPINES — PHILIPPINE ISLANDS

(Population: 11 067 100. E. 1923.)

Source: Rapports hebdomadaires des maladies contagieuses.
Weekly Reports of Communicable Diseases.

Période de quatre semaines se terminant le: Four-week period ending:	Beriberi Beri-beri	Choléra asiatique Asiatic cholera		Coqueluche Whooping-cough	Diphtérie Diphtheria		Dysenterie Dysentery		Fièvre typhoïde Enteric Fever		Grippe Influenza	Paludisme Malaria	Rougeole Measles	Tuberculose, toutes formes Tuberculosis, all forms	Variole Smallpox	
	D.	C.	D.	D.	C.	D.	C.	D.	C.	D.	D.	D.	D.	D.	C.	D.
Total 1925	17214	690	401	874	64	45	8902	4429	1923	1289	4675	22436	478	25442	20	0
Janvier — January 24	1156	0	0	57	4	3	466	216	136	89	243	1381	18	1608	4	0
Février — February 21	1092	0	0	28	2	1	565	269	167	112	256	1598	11	1728	2	0
Mars — March 21	943	0	0	46	3	3	364	191	118	90	260	1410	20	1459	8	0
Avril — April 18	1153	0	0	46	11	6	331	184	175	127	298	1739	37	1923	0	0
Mai — May 16	1063	0	0	59	3	3	413	187	155	117	296	1707	27	1922	0	0
Juin — June 13	1175	2	0	61	3	2	562	296	151	107	261	1744	45	1916	0	0
Juillet — July 11	1423	5	2	73	9	5	1250	594	154	109	341	1907	46	2031	0	0
Août — August 8	1501	4	3	67	10	7	1725	755	153	120	291	1964	38	2028	4	0
Septembre — Septemb. 5	1500	3	3	88	4	1	1111	574	168	111	372	1717	131	2195	0	0
Octobre — October 3	1546	82	27	88	5	4	647	356	140	115	463	1770	33	2085	0	0
Octobre — October 31	1414	156	87	94	6	6	461	246	125	85	548	1565	17	1968	2	0
Novembre — Novemb. 28	1454	206	109	100	3	3	526	281	133	101	514	1791	18	2141	0	0
Décembre — December 26	1544	194	129	53	1	1	399	238	126	102	459	1821	24	2068	0	0
Décembre — December 31*	250	38	41	14	0	0	82	42	22	19	73	322	13	370	0	0

* Cinq jours seulement — Five days only.

PROTECTORAT D'ADEN (Arabie) — ADEN PROTECTORATE (Arabia)

(Population : 54923. 1921.)

Source: Rapports du Ministère britannique de Santé. — Reports from the British Ministry of Health.

Maladie — Disease			Total 1923	Total 1924	Total 1925	1925 Période de quatre semaines se terminant le: — Four-week period ending: Janv. Jan. 24	Fév. Feb. 21	Mars March 21	Avril April 18	Mai May 16	Juin June 13	Juillet July 11	Août Aug. 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Dec. 26
Dengue	Dengue	C.	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diarrhée	Diarrhœa	C.			2	0	0	1	0	0	0	0	0	0	0	1	0	0
Dysenterie	Dysentery	C.	12	22	43	1	2	0	0	1	0	4	1	2	5	4	11	12
		D.	3	11	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Fièvre ondulante	Undulant fever	C.			1	1	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre récurrente	Relapsing fever	C.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre typhoïde	Enteric fever	C.	2	1	12	3	0	0	1	3	2	1	1	0	0	0	1	0
		D.	0	1	6	1	0	0	0	1	1	0	1	0	1	0	0	1
Grippe	Influenza	C.	0	13	44	0	0	0	0	0	33	11	0	0	0	0	0	0
Méningite cérébro-spin.	Cerebro-spinal meningitis	D.	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Paludisme	Malaria	C.	0	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pneumonie	Pneumonia	C.	30	30	19	2	0	2	2	1	2	2	2	0	2	0	1	3
		D.	16	13	7	0	0	1	0	1	2	0	1	1	0	0	0	1
Varicelle	Chickenpox	C.	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Variole	Smallpox	C.	43	9	16	0	4	7	0	2	2	0	0	0	0	0	0	1
		D.	6	1	5	0	0	1	3	0	1	0	0	0	0	0	0	0

SIAM

(Population: 9 724 000. E. 1925.)

Source: Rapports du Service de Santé. — Reports from the Department of Public Health.

Maladie — Disease			Total 1922	Total 1923	Total 1924	Total 1925	1925 Période de quatre semaines se terminant le: — Four-week period ending: Janv. Jan. 24	Fév. Feb. 21	Mars March 21	Avril April 18	Mai May 16	Juin June 13	Juill. July 11	Août Aug. 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Déc. 26	Déc. 27 Jan. * 2
Choléra asiatique	Asiatic cholera	C.	138	213	97	3202	5	8	2	7	27	68	26	2	1	7	62	1139	1620	228
		D.	80	108	61	2076	3	5	2	5	15	30	11	1	1	4	31	730	1083	155
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	0	67	15	33	14	1	0	3	0	0	2	1	1	0	0	3	6	2
		D.	0	25	7	19	5	3	0	1	0	0	2	1	1	0	0	2	3	1
Peste	Plague	C.	196	397	93	378	45	67	104	15	12	9	18	24	41	27	3	10	2	1
		D.	164	329	67	291	29	60	72	14	12	9	13	16	33	20	3	8	2	0
Variole	Smallpox	C.	472	1451	588	287	5	20	67	48	39	21	50	0	21	0	0	0	9	7
		D.	117	743	173	111	3	18	26	14	7	17	14	0	6	0	0	0	2	4

* Données pour une semaine. — Data for one week.

ZONE DU CHEMIN DE FER DE LA MANDCHOURIE DU SUD — ZONE OF THE SOUTH MANCHURIA RAILWAY

(Population: 274 625 E. 1925.)

Source: Rapports du Bureau sanitaire du Gouvernement de Kouan-Toung. — The Sanitation Office of the Kwantung Government.

Maladie — Disease		Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*															
Choléra asiatique	Asiatic cholera	0	0	2	0	0	0	0	0	0	0	0	1	1	0	0
Diphtérie	Diphtheria	174	199	32	2	11	9	7	5	6	2	10	3	3	15	9
Dysenterie	Dysentery	696	999	795	9	11	10	14	18	115	261	136	73	42	25	21
Encéphalite léthar.	Encephalitis lethar.	—	—	2	0	1	0	0	0	0	0	0	0	1	0	0
Fièvre récurrente	Relapsing fever	1	4	12	2	5	1	0	1	0	0	0	0	0	2	1
Fièvre paratyphoïde	Paratyphoid fever	75	98	120	6	19	5	5	7	4	11	11	13	22	7	10
Fièvre typhoïde	Typhoid fever	418	701	643	27	49	22	33	28	42	41	53	86	118	85	59
Méningite cérébro-spinale	Cerebro-spinal meningitis	6	18	12	1	2	2	0	1	1	1	0	0	0	2	2
Scarlatine	Scarlet fever	189	277	608	37	69	85	76	75	55	24	20	26	26	37	78
Typhus exanthém.	Typhus	22	20	16	1	0	2	4	6	0	1	0	0	0	2	0
Variole	Smallpox	87	162	482	55	79	91	140	70	17	10	5	0	0	8	7

AUSTRALASIE — AUSTRALASIA

AUSTRALIE — AUSTRALIA

(Population: 5 931 184. E. 31 déc. 1924.)

Cas de maladies à déclaration obligatoire notifiés en 1919-1925; par semaines en 1925.
Cases of Notifiable Diseases reported in 1919-1925; by Weeks in 1925.

Sources: *Health*, Journal of Commonwealth Health Department, 1923; Medical Journal of Australia.
Rapports du Directeur général de Santé. — Reports from Director-General of Department of Health.

Semaine se terminant le: Week ending:		Coqueluche Whooping-cough *a*	Diphtérie Diphtheria	Dysenterie Dysentery *b*	Encéphalite léthargique Encephalitis lethargica	Erysipèle Erysipelas *c*	Fièvre puerpérale Puerperal fever *d*	Fièvre typhoïde Typhoid fever	Grippe Influenza *a*	Méningite cérébro-spinale Cerebro-spinal meningitis	Paludisme Malaria *d*	Poliomyélite aiguë Acute poliomyelitis	Rougeole Measles *a*	Scarlatine Scarlet fever	Tuberculose Tuberculosis *e*	Varicelle Chickenpox *a*
Total	1919	—	11858	—	—	—	—	2368	—	100	—	*e* 134	—	2954	—	—
»	1920	—	16024	—	—	—	—	2950	—	100	—	*e* 71	—	5180	—	—
»	1921	391	24783	—	—	277	138	2899	414	80	52	*e* 140	4498	6104	—	—
»	1922	54	14156	—	—	273	125	1936	36	69	64	114	555	5779	—	448
»	1923	930	9915	—	28	242	109	2336	1133	61	30	137	1037	6634	3580	320
»	1924	1783	10918	38	17	286	125	1816	435	71	34	232	164	7345	3803	657
»	1925*	199	8098	53	26	404	162	1369	37	95	32	261	14784	5409	3776	271
Janvier — January	10	4	151	2	0	6	3	49	0	0	0	6	11	81	84	9
	17	3	113	2	1	4	2	31	0	2	0	4	6	71	101	15
	24	2	109	2	0	8	3	44	0	0	0	3	10	71	93	12
	31	7	120	10	1	4	3	30	0	2	0	8	7	76	67	9
Février — February	7	13	128	0	0	6	3	52	0	1	0	5	15	75	115	9
	14	14	142	3	1	4	2	48	0	0	0	4	14	79	83	4
	21	34	184	3	2	5	3	45	2	4	2	9	42	83	95	4
	28	5	123	0	1	5	2	32	5	0	5	3	30	87	74	1
Mars — March	7	2	193	1	0	4	3	59	1	3	1	4	79	112	66	3
	14	2	195	1	1	5	6	60	1	6	1	10	63	118	93	5
	21	0	221	2	0	5	1	35	0	3	0	6	163	154	85	4
	28	11	221	2	1	10	3	22	1	5	1	5	144	150	89	1
Avril — April	4	8	238	1	1	7	1	49	3	2	3	6	271	180	59	2
	11	2	161	1	0	11	2	30	2	4	2	7	91	104	53	2
	18	1	215	1	1	9	1	54	3	1	3	2	490	135	72	4
	25	3	175	1	0	4	5	18	0	1	0	4	264	121	63	7
Mai — May	2	4	226	2	0	19	5	54	0	3	0	5	612	177	79	5
	9	1	166	3	0	9	4	21	0	0	0	10	630	117	56	13
	16	0	233	1	0	8	4	26	1	2	1	12	668	128	97	15
	23	0	197	1	0	13	2	21	0	0	0	10	867	136	90	10
	30	0	242	2	1	24	3	48	3	2	3	11	861	138	90	9
Juin — June	6	3	201	0	0	10	3	17	1	2	1	8	905	118	79	1
	13	0	187	0	0	7	2	24	0	0	0	11	873	132	52	7
	20	17	206	0	1	12	3	17	0	1	0	5	1224	131	86	3
	27	10	204	0	0	13	6	17	2	2	2	3	1128	115	67	3
Juillet — July	4	1	163	0	1	20	2	26	0	2	0	5	905	103	57	3
	11	21	187	0	0	11	0	12	0	2	0	3	995	121	59	8
	18	0	176	2	0	17	2	10	0	3	0	4	705	94	55	2
	25	8	168	0	0	13	8	16	1	0	1	2	710	109	61	1
Août — August	1	0	144	0	0	11	2	6	1	5	1	5	432	115	63	1
	8	4	140	0	0	11	0	13	0	2	0	8	388	96	60	1
	15	0	126	1	0	9	5	15	2	0	2	8	206	82	60	2
	22	5	139	1	1	4	5	10	0	3	0	3	167	90	74	3
	29	5	123	0	0	5	0	4	1	3	1	3	86	98	48	4
Septembre — September	5	0	143	1	1	11	3	9	0	2	0	1	174	89	68	2
	12	0	126	0	0	8	3	12	0	1	0	5	91	85	74	3
	19	0	119	0	0	5	6	15	0	0	0	1	111	103	85	1
	26	0	132	0	0	6	2	14	0	1	0	1	37	81	75	7
Octobre — October	3	1	114	0	1	7	7	13	0	2	0	0	44	78	72	6
	10	0	104	0	0	6	9	11	0	1	0	2	21	99	78	4
	17	1	119	0	1	4	3	21	1	2	0	2	15	87	61	8
	24	0	122	0	0	3	2	15	1	3	0	2	35	97	79	6
	31	1	132	0	0	6	2	17	2	2	0	6	22	95	72	5
Novembre — November	7	0	105	0	1	4	3	11	0	2	0	1	11	84	74	4
	14	0	121	1	1	5	1	18	0	0	0	4	29	92	51	7
	21	0	107	0	1	2	4	17	2	3	0	2	19	98	68	7
	28	6	135	0	1	4	4	25	0	0	2	5	37	73	91	10
Décembre — December	5	0	110	0	2	5	6	22	0	0	0	3	22	96	70	4
	12	0	134	2	2	1	5	30	1	2	0	6	28	67	79	4
	19	0	125	0	1	7	1	40	0	1	0	6	21	90	90	6
	26	0	86	3	0	3	2	17	0	1	1	6	2	61	52	3
1926 Janvier — January	2	0	114	1	0	2	1	33	0	2	2	12	3	38	44	2

	1919	1920	1921	1922	1923	1924	1925
Charbon Anthrax	4	8	9	6	3	4	2
Lèpre Leprosy	9	12	12	10	14	18	16
Peste Plague	0	0	106	46	1	0	0

	1919	1920	1921	1922	1923	1924	1925
Tétanos Tetanus	—	—	0	5	7	17	2
Typhus ex. Typhus	0	0	0	0	0	2	3
Variole Smallpox	0	0	8	0	0	0	0

Déclaration obligatoire: — Compulsorily notifiable:

a Dans l'Australie du Sud seulement. — In South Australia only.

b Dans l'Australie du Sud, l'Australie occidentale, le Queensland et l'Etat de Victoria. — In South Australia, West Australia, Queensland and Victoria.

c Dans l'Australie du Sud, l'Australie occidentale, le Queensland et la Tasmanie. — In South Australia, West Australia, Queensland and Tasmania.

d Dans l'Australie du Sud, l'Australie occidentale, le Queensland, la Tasmanie et l'Etat de Victoria. — In South Australia, West Australia, Queensland, Tasmania and Victoria.

e Les données pour l'Australie du Sud ne sont pas comprises. — Data for South Australia are not included.

* Total pour l'année du calendrier. — Total for calendar year.

AUSTRALIE — AUSTRALIA

(Population: 5 873 503. E. 31 déc. 1924.)

Sources: Health, Journal of Health Department, 1923. Medical Journal of Australia, 1922-1923; (pour 1921-1922 — for 1921-1922). Rapports du Ministère britannique de Santé pour les années 1921-1922. — Rapports du Directeur général du Service de Santé. — Reports from the British Ministry of Health for Years 1921-1922. — Reports from Director-General of Department of Health.

Maladie — Disease		1921	1922	1923	1924	1925	1921	1922	1923	1924	1925	1921	1922	1923	1924	1925
Cas	*Cases*	Queensland (Population: 841 772. E. 31 déc. 1924)					Victoria (Population: 1 657 095. E. 31 déc. 1924)					Australie occidentale Western Australia (Population: 364 124. E. 31 déc. 1924)				
Choléra asiatiq.	Asiatic cholera	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Peste	Plague	103	13	0	0	0	0	0	0	0	0	0	0	0	0	0
Ankylostomiase	Ankylostomiasis	89	107	—	—	—	0	0	—	—	—	1	—	—	—	—
Anthrax	Anthrax	1	0	—	0	0	2	1	2	1	3	—	0	—	0	0
Béribéri	Beri-beri	—	—	—	—	—	—	—	—	—	—	21	33	19	30	17
Bilharzia	Bilharzia	1	1	—	—	—	0	0	—	—	—	0	1	—	—	—
Dengue	Dengue	—	—	—	—	—	—	—	—	—	—	27	16	3	0	0
Diphtérie	Diphtheria	2423	1275	1066	1103	1207	9458	5025	3142	3608	2407	1020	584	494	541	354
Dysenterie	Dysentery	11	0	3	3	7	6	2	7	20	28	21	10	6	15	9
Encéphalite let.	Encephalitis leth.	—	—	0	0	1	2	18	21	13	23	—	—	1	0	1
Erysipèle	Erysipelas	100	124	102	143	133	—	—	—	—	—	56	41	38	52	99
Fièvre continue	Continued fever	0	0	0	—	—	0	0	—			2	1	—	—	—
Fièvre puerp.	Puerperal fever	30	28	20	27	39	52	61	40	45	26	13	4	8	13	16
Fièvre typhoïde	Enteric fever	468	400	516	501	280	532	294	410	288	161	391	244	261	231	223
Grippe	Influenza	274	9	—	—	—	—	—	—	—	—	19	1	3	—	—
Lèpre	Leprosy	—	—	—	0	13				0	—			1	1	3
Méningite céréb.-spin.	Cerebro-spinal meningitis	19	22	9	14	20	20	13	8	21	22	0	0	2	4	2
Paludisme	Malaria	4	17	2	5	3	7	5	4	0	0	38	40	24	28	26
Poliomyélite	Poliomyelitis	28	11	1	116	39	21	22	7	12	132	1	0	8	2	19
Scarlatine	Scarlet fever	381	215	311	393	356	2816	1889	1572	2142	1218	234	97	58	70	123
Tétanos	Tetanus	—	—	—	—	0	—	5	6	—	2	—	—	1	—	—
Tuberculose pulmonaire	Pulmonary tuberculosis	619	450	393	356	305	1171	1098	987	968	*a* 1037	449	388	362	428	403
Variole	Smallpox	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0
Maladies vénériennes	Venereal diseases	—	1855	1458	1655	—	5414	5584	4371	5262	—	1115	727	693	516	574
Chancre mou	Soft chancre	*b* 77	35	11	3	—	175	143	110	65	—	36	27	35	14	8
Gonorrhée	Gonorrhœa	*b* 1944	1607	1833	1462	—	3704	3856	3331	4160	—	906	591	544	536	534
Syphilis prim.	Prim. syphilis	*b* 241	179	89	127	—	1535	1585	1100	1037	—	68	49	40	19	9
Syphilis second.	Second. syphilis	*b* 32	14		34	—						96	57	57	69	47

Cas	*Cases*	Nouvelle Galles du Sud New South Wales (Population: 2 172 227)					Australie du Sud Southern Australia (Population: 513 410)					Tasmanie Tasmania Population: 219 021)				
Choléra asiatiq.	Asiatic cholera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peste	Plague	2	33	1	0	0	0	0	0	0	0	0	0	0	0	0
Anthrax	Anthrax	6	5	—	0	0	0	0	1	0	0	0	0	0	0	0
Bilharzia	Bilharzia	—	—	—	—	—	—	—	—	—	—	1	0	0	0	—
Coqueluche	Whooping-cough	—	—	—	—	—	391	54	930	1783	174	—	—	—	—	—
Diphtérie	Diphtheria	6854	4094	3480	4364	3026	2763	1508	844	662	407	2203	1636	937	597	473
Encéphalite léthargique	Encephalitis lethargica	—	—	0	0	0	—	—	0	0	0	1	—	1	0	1
Erysipèle	Erysipelas	—	—	—	—	—	121	108	102	91	169	—	—	—	—	0
Fièvre puerp.	Puerperal fever	—	—	—	—	—	21	16	30	26	62	22	16	8	18	16
Fièvre typh.	Enteric fever	949	706	873	768	529	251	143	121	93	96	308	137	109	78	50
Grippe	Influenza	—	—	—	—	—	414	36	1133	435	75	—	—	—	—	—
Méningite cérébro-spin.	Cerebro-spinal meningitis	30	21	27	29	38	6	6	6	2	4	2	6	8	1	4
Paludisme	Malaria	—	—	—	—	—	1	2	0	1	2	2	0	0	0	0
Poliomyélite	Poliomyelitis	184	33	104	108	50	—	47	17	0	13	2	3	0	3	1
Rougeole	Measles	—	—	—	—	—	4498	555	1037	164	14804	—	—	—	—	—
Scarlatine	Scarlet fever	1060	1153	2623	3421	3024	1245	1421	1296	789	273	368	995	615	377	288
Tuberculose pulmonaire	Pulmonary tuberculosis	*a* 1240	*a* 1045	*a* 1218	*a* 1096	*a* 1281	499	492	481	556	540	241	170	173	235	183
Varicelle	Chickenpox	—	—	—	—	—	—	448	320	657	272	—	—	—	—	—
Variole	Smallpox	0	0	0	0	—	0	0	0	0	0	0	0	0	0	0
Chancre mou	Soft chancre	288	155	100	76	—	—	—	—	—	—	24	36	3	—	2
Gonorrhée	Gonorrhœa	6992	4850	5115	4628	—	—	—	—	—	—	290	316	326	—	400
Syphilis	Syphilis	2055	1270	1240	968	—	—	—	—	—	—	105	121	47	57	44

a Données pour tuberculose toutes formes; à déclaration obligatoire dans une partie de l'Etat seulement. — Data given for tuberculosis all forms; notifiable only in portion of the State.

b Données pour l'année finissant le 30 juin — Data for year ending June 30th.

NOUVELLE-ZÉLANDE — NEW ZEALAND

(Population: 1 450 000. E. 31 mars 1924.)

Sources: Report on the Vital Statistics of the Dominion of New Zealand, 1919-1925.
Rapport du Directeur général du Service de Santé, 1919-1924. — Report of the Director-General of Health, 1919-192
Rapports hebdomadaires du Service de Santé, 1925. — Weekly Reports from the Department of Health, 1925.

Semaine se terminant le: / Week ending:	Diphtérie / Diphtheria		Encéphalite létharg. / Encephalitis lethargica *a*		Erysipèle / Erysipelas		Fièvre puerpérale / Puerperal Fever		Fièvres typhoïde et paratyphoïde / Enteric fever		Grippe pulmonaire, fulminante et septicém. Pneumonic, fulminant & septicæmic influenza *b*		Méningite cérébro-spinale / Cerebro-spinal meningitis		Pneumonie primaire aiguë / Acute primary pneumonia		Poliomyélite aiguë / Acute polio-myelitis		Scarlatine / Scarlet fever		Tuberculos toutes formes / Tuberculosi all forms	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Total 1919	3499	149	90	29	73	7	79	52	477	34	—	—	96	40	879	401	11	1	1521	23	984	762
» 1920	2442	95	42	19	156	5	124	67	389	40	*c*470	*c*480	79	34	1933	528	76	2	1248	15	1305	851
» 1921	2611	107	23	14	228	5	178	48	451	24	295	105	56	23	1029	427	267	9	1845	24	1207	793
» 1922	1989	78	36	13	271	13	262	52	539	67	216	23	42	23	946	407	98	9	1449	10	1129	803
» 1923	1951	68	36	11	213	9	176	52	276	23	1144	223	36	14	788	339	17	2	1201	13	1002	792
» 1924	2717	82	30	13	210	11	308	52	354	19	180	32	31	13	756	306	73	22	1176	13	1072	736
» 1925	1537	48	24	2	179	2	319	31	275	19	70	22	31	11	569	159	1319	171	1028	6	1220	501
Janvier — 5	23	1	1	0	0	0	5	0	4	1	1	0	0	0	8	3	19	2	16	0	9	10
January 12	36	0	1	0	2	0	5	0	6	1	1	0	0	0	12	3	30	4	32	0	21	10
19	34	1	0	0	7	0	2	1	9	0	1	0	2	0	9	4	60	4	20	0	22	13
26	24	1	1	0	1	0	10	1	3	1	2	0	4	1	2	4	58	9	9	0	27	10
Février — 2	28	0	0	0	3	0	4	0	5	0	2	0	0	1	6	2	88	16	23	1	33	10
February 9	26	0	2	0	4	0	3	1	0	0	0	0	0	0	5	3	104	19	18	1	27	9
16	31	1	0	0	3	0	7	0	11	0	1	0	0	0	4	3	138	6	15	0	18	7
23	29	1	0	0	7	0	3	0	5	0	0	0	0	0	4	3	79	10	29	0	44	3
Mars — 2	21	1	0	0	3	0	6	2	9	0	1	0	1	0	3	2	98	18	11	0	23	7
March 9	33	0	1	0	4	0	8	0	8	0	1	1	0	0	3	2	118	15	20	0	33	7
16	34	1	0	0	3	0	5	0	9	0	1	0	1	0	4	3	70	11	20	0	20	3
23	29	0	1	0	4	0	5	0	9	1	0	1	0	0	7	3	109	13	15	0	26	10
30	32	0	0	0	3	0	7	1	9	1	0	0	0	0	5	2	82	9	15	0	13	6
Avril — 6	20	0	0	0	4	0	5	0	9	1	0	0	2	2	4	2	48	11	20	0	19	6
April 13	23	0	0	0	2	0	7	0	6	1	0	0	1	0	4	0	39	4	21	0	12	7
20	19	1	0	0	3	0	6	2	3	1	2	0	0	0	3	2	28	4	13	0	18	10
27	19	1	0	0	4	0	3	0	3	0	0	0	0	0	4	0	19	2	10	0	18	13
Mai — 4	25	1	2	0	1	0	9	0	10	2	4	0	1	1	4	2	17	1	33	0	15	8
May 11	29	1	1	0	3	0	8	1	5	0	0	0	0	0	3	1	13	1	16	0	21	13
18	18	0	0	1	2	0	4	0	3	0	1	1	0	0	4	2	13	1	28	0	21	13
25	36	1	0	0	2	0	6	1	6	0	0	0	1	0	12	3	13	3	23	0	25	7
Juin — 1	41	2	1	0	10	0	5	0	2	0	1	0	0	0	14	2	14	0	31	0	16	9
June 8	32	0	0	0	2	0	3	2	6	0	2	0	1	0	9	2	7	0	16	0	12	10
15	32	2	0	0	3	0	1	3	7	0	0	0	1	0	2	1	6	0	21	0	20	8
22	43	0	0	0	4	0	5	0	3	1	2	1	0	1	13	1	5	0	26	0	19	13
29	43	3	0	0	6	0	11	0	11	2	3	1	1	0	11	2	1	0	32	0	10	13
Juillet — 6	37	1	0	0	4	0	2	1	1	1	1	0	0	0	16	3	6	0	22	0	19	0
July 13	43	3	0	0	6	0	11	0	3	0	1	1	0	0	10	6	2	0	45	2	21	9
20	46	2	0	0	2	0	7	1	3	0	1	0	1	0	10	4	4	1	23	0	31	8
27	34	0	0	0	2	0	11	2	8	1	2	0	0	0	14	6	4	1	25	0	28	10
Août — 3	49	5	0	0	7	0	10	1	3	0	1	0	0	0	19	3	0	1	14	0	25	9
August 10	50	1	1	0	2	0	5	0	3	1	3	2	0	0	16	3	4	1	12	0	27	13
17	34	1	1	0	7	0	6	0	7	0	2	1	1	1	14	2	4	1	18	0	27	14
24	36	2	1	0	3	0	6	3	3	1	5	0	0	0	15	1	2	1	21	0	21	9
31	29	1	0	0	5	1	5	2	8	0	3	1	0	0	20	5	0	0	15	0	23	11
Sept. — 7	40	1	1	0	2	0	5	0	10	0	1	0	2	0	23	4	0	0	18	0	25	10
Sept. 14	26	0	1	0	2	0	9	2	2	0	4	2	2	1	22	3	1	0	22	0	21	7
21	25	0	1	0	2	0	8	0	5	0	2	0	1	0	20	4	2	0	16	0	25	7
28	28	2	0	0	7	0	7	1	4	0	4	3	1	1	23	4	5	0	18	1	42	9
Oct. — 5	29	1	3	0	6	0	7	0	4	0	0	1	0	0	19	4	0	0	16	0	29	15
Oct. 12	22	1	1	1	2	0	12	1	4	0	3	1	0	0	27	8	2	0	14	0	19	15
19	18	0	0	0	5	0	7	1	7	0	1	2	1	1	17	6	1	0	21	1	27	8
26	24	2	0	0	3	0	9	1	9	0	3	1	1	1	19	6	1	0	18	0	36	12
Nov. — 2	17	0	0	0	2	0	10	0	4	0	1	1	0	0	14	4	0	0	13	0	23	12
Nov. 9	29	0	0	0	3	0	4	0	1	0	1	0	3	0	20	3	4	0	16	0	44	11
16	38	3	0	0	1	0	5	0	2	0	0	0	0	0	14	4	0	2	15	0	37	17
23	22	1	0	0	4	0	4	0	2	0	2	0	0	0	5	2	0	0	20	0	25	13
30	15	0	0	0	4	0	7	0	0	0	2	0	0	0	12	1	0	0	14	0	22	12
Déc. — 7	19	0	0	0	3	1	7	0	5	1	0	0	0	0	14	7	0	0	22	0	23	13
Dec. 14	28	2	0	0	2	0	5	0	7	0	0	0	1	0	9	5	0	0	19	0	27	10
21	26	0	3	0	2	0	5	0	6	1	1	1	1	0	8	4	1	0	21	0	20	8
28	13	0	0	0	1	0	2	0	3	0	0	0	0	0	10	0	0	0	17	0	11	5

	Charbon / Anthrax		Actinomycose / Actinomycosis		Botulisme / Food-poisoning		Eclampsie / Eclampsia		Lèpre / Leprosy		Môle hydabiforme / Hydatids		Ophtalmie des nouveau-nés / Ophthalmia neonatorum		Tétanos / Tetanus		Trachome / Trachoma	Variole / Smallpox	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	C.	D.
1919	1	1	—	—	—	—	—	—	—	—	45	10	24	0	—	10	7	—	—
1920	1	1	1	0	—	—	—	—	—	—	45	6	48	0	15	15	10	95	0
1921	2	—	2	2	1	0	—	—	—	—	36	15	35	0	21	14	12	2	0
1922	2	1	1	0	4	2	—	—	—	—	36	8	26	0	22	9	7	0	0
1923	0	0	2	1	13	0	58	2	—	—	29	2	27	0	20	7	8	0	0
1924	0	0	1	0	14	0	39	2	—	—	38	4	31	0	16	9	20	0	0
1925	0	0	4	0	18	0	74	12	2	0	35	5	36	1	20	8	29	0	0

a Déclaration obligatoire depuis le 20 mai 1919. — Declared notifiable disease on May 20th, 1919.
b Depuis le 1er juillet 1920, ces trois variétés de grippe seulement sont à déclaration obligatoire. — Only forms of influenza notifiable since July 1st, 192
c Pour les cas, total pour 6 mois (juillet-décembre); pour les décès, total pour l'année entière. — Cases, total for six months; deaths, total for the entire yea

EUROPE

ALLEMAGNE — GERMANY

(Population: 62 365 478. R. 16 juin 1925.)

Cas de maladies à déclaration obligatoire notifiés en 1919-1925; par semaine en 1925.
Cases of Notifiable Diseases reported in 1919-1925; by weeks in 1925.

Source: Reichs-Gesundheitsblatt des Reichsgesundheitsamts, 1926, No. 4, Berlin.

Semaine se terminant le: Week ending:	Charbon Anthrax	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Méningite cérébro-spinale Cerebro-spinal meningit.	Poliomyélite aiguë Acute poliomyelit.	Rage humaine Rabies	Scarlatine Scarlet fever	Trachome Trachoma	Variole Smallpox
Total 1919	18	—	—	—	—	—	—	—	—	—	5012
» 1920	35	—	—	—	—	—	—	—	—	—	2042
» 1921	80	63018	31624	8006	18808	696	—	43	48281	1887	688
» 1922	129	37949	5036	6422	10993	1622	—	52	32448	1522	215
» 1923	106	31942	8449	5592	13162	1149	*204	64	27234	1192	17
» 1924	118	37248	5789	6776	14221	742	498	45	32798	1784	16
» 1925	165	36296	4775	7003	12476	750	386	20	39919	2777	24
Janvier-January 10	5	952	27	164	181	11	3	0	885	26	0
17	4	1016	49	164	174	13	8	0	850	31	0
24	4	885	25	152	150	15	2	2	842	41	0
31	1	953	27	156	133	14	4	0	703	38	0
Février-February 7	2	980	58	197	225	11	5	0	852	57	0
14	2	948	43	209	143	12	8	0	770	24	0
21	4	876	59	209	140	22	5	0	757	45	1
28	1	833	46	175	146	19	10	0	757	30	0
Mars-March 7	0	949	47	190	133	18	6	0	746	39	0
14	5	797	39	143	146	20	2	0	730	37	0
21	3	748	43	156	164	19	9	0	657	36	0
28	8	736	47	146	154	27	4	0	672	34	0
Avril-April 4	3	695	43	139	143	16	1	0	631	49	0
11	1	682	37	139	142	16	10	0	581	24	0
18	6	688	42	154	104	22	2	0	633	43	2
25	3	672	51	142	119	19	5	0	684	50	0
Mai-May 2	4	631	49	129	137	31	8	0	596	72	0
9	4	666	59	141	140	23	8	0	654	86	0
16	5	612	38	108	147	9	5	0	626	92	0
23	7	638	54	105	136	16	4	0	574	29	1
30	1	722	60	120	177	21	4	0	676	59	6
Juin-June 6	3	555	47	107	163	12	1	1	550	44	3
13	2	560	84	110	179	18	5	1	638	62	1
20	2	573	178	123	230	20	8	0	624	68	0
27	1	569	125	123	234	21	4	2	614	72	1
Juillet-July 4	2	577	114	125	293	14	4	0	718	56	0
11	1	578	141	108	376	10	7	0	688	50	4
18	4	620	132	111	568	12	5	0	695	61	1
25	4	551	172	118	378	21	4	2	612	93	2
Août-August 1	1	553	240	92	348	10	8	1	685	61	1
8	8	525	278	108	404	13	7	1	663	29	1
15	4	538	213	115	504	8	12	0	607	37	0
22	3	620	311	120	535	9	19	0	782	31	0
29	2	639	382	132	474	10	9	0	778	43	0
Sept.-Sept. 5	3	630	330	128	520	10	16	0	806	47	0
12	9	628	206	123	506	12	13	1	799	36	0
19	2	643	144	114	525	11	18	0	930	59	0
26	7	733	121	126	410	11	8	0	1127	39	0
Oct.-Oct. 3	2	683	81	113	365	10	19	0	934	33	0
10	2	647	60	147	367	6	8	2	904	33	0
17	2	687	57	126	301	11	16	2	903	48	0
24	4	672	63	115	244	7	8	0	937	39	0
31	5	780	56	125	255	16	11	1	1061	56	0
Nov.-Nov. 7	3	793	42	138	228	14	10	0	917	141	0
14	2	718	36	115	152	10	8	0	960	90	0
21	3	703	38	151	161	10	13	3	893	120	0
28	2	720	34	136	144	10	4	0	955	79	0
Déc.-Dec. 5	5	730	26	118	127	10	12	0	897	116	0
12	2	664	37	134	96	12	1	0	903	71	0
19	0	601	42	131	91	12	5	1	885	51	0
26	0	497	23	104	79	12	4	0	728	45	0
1926 Janv.-Jan. 2	2	630	19	129	85	14	6	0	850	25	0

Autres maladies déclarées: — Other diseases reported:

	Fièvre récurrente Relapsing fever	*Morve Glanders*	*Trichinose Trichinosis*	*Typhus exanthém. Typhus*
1919	—	—	—	3549
1920	—	—	—	483
1921	53	1	16	533
1922	31	2	110	386
1923	4	1	25	27
1924	3	2	13	8
1925	7	1	9	3

* Données pour huit Etats seulement. — Data for eight States only.

ANGLETERRE ET PAYS DE GALLES — ENGLAND AND WALES

(Population: 38 890 000. E. 30 juin 1925.)

Cas de maladies à déclaration obligatoire déclarés en 1919-1925; par semaines en 1925.
Cases of Notifiable Diseases reported in 1919-1925; by Weeks in 1925.

Source: Registrar-General's Weekly Returns of Births, Deaths and Cases of Infectious Diseases.

Semaine se terminant le: Week ending:	Diphtérie Diphtheria	Dysenterie * Dysentery	Encéphalite léthar. Encephalitis leth.	Fièvre puerpérale Puerperal fever	Fièvres typh. et paratyph. Enteric fever	Méningite cérébro-spinale Cerebro-spinal fever	Ophtalmie des nouv.-nés Ophthalmia neon.	Pneumonie * Pneumonia	Polio-encéphalite Polio-encephalitis	Poliomyélite Poliomyelitis	Scarlatine Scarlet fever	Variole Smallpox
Total 1919	53918	1657	541	2016	3447	848	8648	45260	62	553	82398	294
» 1920	69481	1253	890	2898	3109	583	10304	38859	36	293	119490	263
» 1921	66506	1223	1470	2211	3835	411	8313	33830	51	488	137073	315
» 1922	52153	789	454	2134	2414	344	7107	52513	31	355	108242	973
» 1923	40009	484	1025	2191	3211	301	6592	44624	57	587	85603	2485
» 1924	41980	388	5039	2183	4121	397	6267	60794	83	777	84654	3765
» 1925	47723	345	2637	2396	7779	402	5748	55960	51	371	91357	5363
Janvier — January 10	1035	3	45	49	51	12	99	1299	1	5	1748	88
17	1078	13	30	48	26	8	79	1263	1	6	1925	113
24	1109	7	66	53	31	6	133	1362	3	9	1896	146
31	1080	9	47	51	56	15	99	1497	0	6	1757	159
Février — February 7	1094	4	63	52	24	12	127	1796	1	4	1758	133
14	1032	9	45	35	42	8	120	1743	0	6	1659	148
21	1018	13	55	33	46	11	124	1479	1	6	1694	152
28	971	3	58	53	32	7	106	1315	1	7	1729	140
Mars — March 7	933	7	64	39	41	6	120	1447	0	2	1604	123
14	878	14	55	38	40	8	141	1400	1	2	1493	141
21	883	15	62	55	34	12	137	1527	0	5	1705	128
28	976	4	80	51	29	7	109	1421	0	8	1703	136
Avril — April 4	854	10	55	54	42	7	112	1454	0	6	1726	152
11	768	19	46	51	35	10	99	1325	1	0	1575	144
18	828	3	51	74	34	15	130	1345	1	2	1548	141
25	775	11	54	61	28	10	117	1136	2	4	1524	167
Mai — May 2	763	7	55	45	39	10	111	977	0	3	1562	174
9	846	4	81	45	57	13	103	1026	0	6	1678	158
16	810	4	69	58	55	8	106	965	2	3	1701	150
23	748	2	89	43	35	11	114	1062	0	4	1626	135
30	692	2	73	52	54	14	118	1012	0	4	1571	86
Juin — June 6	675	5	64	36	50	6	107	701	1	5	1291	99
13	763	4	59	44	48	6	121	836	0	3	1400	95
20	823	3	61	42	58	8	104	825	1	3	1307	85
27	792	6	49	29	56	5	117	643	1	0	1311	68
Juillet — July 4	843	4	54	38	41	5	118	694	0	5	1562	64
11	891	4	51	60	45	12	130	779	0	8	1636	89
18	929	5	53	38	65	5	129	709	0	4	1686	86
25	857	5	51	44	59	3	107	607	2	6	1572	62
Août — August 1	838	6	45	36	72	7	100	573	3	5	1386	38
8	690	3	41	37	80	3	111	418	0	7	1260	63
15	784	11	36	53	91	9	118	440	1	10	1398	34
22	706	8	45	38	87	5	113	441	1	16	1331	47
29	778	8	32	40	83	5	112	450	2	13	1370	35
Sept. — September 5	743	6	41	43	87	8	101	418	3	13	1382	32
12	824	6	41	38	102	4	114	419	2	19	1514	36
19	942	12	41	30	90	2	94	579	1	13	1896	30
26	910	3	46	32	75	7	102	768	1	16	1964	27
Octobre — October 3	993	9	44	59	59	5	102	739	1	15	2213	28
10	1117	7	35	56	68	6	120	890	3	13	2305	32
17	1138	5	53	35	57	7	87	756	3	10	2375	42
24	1233	8	42	43	65	5	115	967	3	12	2605	69
31	1170	1	53	44	89	7	110	1100	1	13	2577	100
Nov. — November 7	1105	8	38	50	64	11	117	1017	0	9	2544	61
14	1041	2	42	37	63	4	92	889	1	6	2257	74
21	1029	8	29	53	44	8	99	1193	0	11	2467	73
28	1073	2	42	50	55	7	91	1537	2	7	2253	108
Déc. — December 5	994	6	52	51	52	5	109	1778	0	4	1959	124
12	976	9	44	61	38	10	111	1928	1	10	1961	144
19	971	3	44	50	37	7	111	1842	2	8	1836	181
26	854	7	33	33	23	6	88	1353	0	7	1568	217
1926 Janv. — Jan. 2	1070	8	33	56	45	4	94	1820	0	2	1989	206

Autres maladies déclarées: — Other diseases notified:

	Fièvre continue Continued fever	*Fièvre des tranchées* Trench fever*	*Fièvre récurrente Relapsing fever*	*Typhus exanthémat. Typhus*
1919	39	99	4	3
1920	35	39	7	2
1921	45	15	1	3
1922	18	6	0	13
1923	25	3	3	1
1924	37	3	0	8
1925	23	4	1	0

* A déclaration obligatoire depuis le 1er mars 1919; la pneumonie comprend la pneumonie primaire aiguë et la pneumonie grippale. — Compulsorily notifiable from March 1st, 1919; pneumonia includes acute primary and acute influenzal pneumonia.

ALBANIE — ALBANIA

(Population: 817 460. R. 1923.)

Source: Rapport du Département de Santé. — Report from Health Department.

Maladie — Disease			1925											
			Total	Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Diphtérie	Diphtheria	C.	3	0	0	0	1	2	0	0	0	0	0	0	0
		D.	1	0	0	0	0	1	0	0	0	0	0	0	0
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	9	0	1	0	0	1	0	2	4	0	1	0	0
		D.	2	0	1	0	0	0	0	1	0	0	0	0	0
Rougeole	Measles	C.	44	0	5	0	15	16	4	0	2	0	1	1	0
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	C.	2	1	0	0	0	0	0	0	1	0	0	0	0
		D.	1	1	0	0	0	0	0	0	0	0	0	0	0

ANGLETERRE ET PAYS DE GALLES. — ENGLAND AND WALES.

(Population: 38 890 000 E. 30 juin 1925.)

Source: The Registrar-General's Statistical Review of England and Wales.

Maladie — Disease		1920		1921		1922		1923		1924		1925 *
		C.[1]	D.[2]	C.[1]	D.[2]	C.[1]	D.[2]	C.[1]	D.[2]	C.[1]	D.[2]	C.[1]
Coqueluche	Whooping-cough	*a*	4401	*a*	4576	*a*	6370	*a*	4162	*a*	3983	*a*
Diphtérie	Diphtheria	69481	5648	66506	4772	52153	4075	40009	2722	41980	2501	47723
Dysenterie	Dysentery	1253	254	1223	261	789	216	484	149	388	130	345
Encéphalite létharg.	Encephalitis letharg.	890	480	1470	729	454	339	1025	531	5039	1407	2637
Erysipèle	Erysipelas	16051	838	13231	729	13171	703	12335	622	12879	676	15009
Fièvre des tranchées	Trench fever	39	12	15	7	6	0	3	0	3	0	4
Fièvre méditerran.	Mediterranean fever	*a*	1	*a*	2	*a*	1	*a*	1	*a*	2	*a*
Fièvres récurrente et continue	Relapsing and continued fevers	42	13	46	12	18	8	28	5	37	0	24
Fièvres typhoïde et paratyphoïde	Enteric fever	3109	537	3835	613	2414	465	3211	450	4121	496	2779
Grippe	Influenza	*a*	10665	*a*	8995	*a*	21498	*a*	8461	*a*	18986	*a*
Méningite cérébro-spinale épidémique	Cerebro-spinal fever	583	—	411	—	344	—	301	—	397	—	402
	Meningococcal men.	—	533	—	416	—	360	—	284	—	301	—
Ophtalmie des nouveaux-nés	Ophthalmia neonatorum	10304	46	8313	40	7107	25	6592	16	6267	19	5748
Paludisme	Malaria	32*d*	250	10*d*	143	6*d*	123	3*d*	81	4*d*	97	3*d*
Peste	Plague	3	3	0	0	0	0	0	0	0	0	0
Pneumonie	Pneumonia	38859*b*	37149	33830*b*	38561*c*	52513*b*	51235	44624*b*	36995*c*	60794*b*	38970*c*	55960*b*
Polioencéphalite	Polioencephalitis	36	134	51	40	31	27	57	40	83	35	51
Poliomyélite	Poliomyelitis	293		488	129	355	109	587	79	777	122	371
Rougeole	Measles	*a*	7190	*a*	2241	*a*	5694	*a*	5316	*a*	4834	*a*
Scarlatine	Scarlet fever	119490	1430	137073	1305	108242	1382	85603	993	84654	888	91357
Septicémie puerpérale	Puerperal sepsis	2898	1730	2211	1171	2134	1079	2191	985	2183	1018	2396
Tuberculose :	Tuberculosis :											
Des voies respirat.	Of respir. system	61655	32791	59299	33505	55798	33919	57007	32097	57737	32690	58545
Autres formes	Other forms	15851	9754	15653	9173	16178	8858	18494	8691	18711	8413	19230
Typhus exanthémat.	Typhus	2	0	3	0	13	4	1	1	8	5	0
Variole	Smallpox	263	30	315	5	973	27	2485	7	3765	13	5363

a La déclaration des cas n'est pas obligatoire. — Notification of cases is not obligatory.
b Pneumonie primaire aiguë et pneumonie grippale. — Acute primary and acute influenzal pneumonia.
c Sont inclus les décès de grippe avec complications pulmonaires. — Including deaths from influenza with pneumonic complications.
d Cas contractés en Angleterre et dans le Pays de Galles. — Cases contracted in England and Wales.
[1] Militaires exclus. — Excluding non-civilians.
[2] Militaires inclus. — Including non-civilians.
* Données provisoires. — Provisional figures.

AUTRICHE — AUSTRIA

(Population: 6 614 000. E. 1 juil. 1925.)

Source: MITTEILUNGEN DES VOLKSGESUNDHEITSAMTS WIEN.

Semaine se terminant le: Week ending:		Diphtérie Diphtheria		Dysenterie Dysentery		Fièvre puerpérale Puerperal fever		Fièvre paratyphoïde Paratyphoid fever		Fièvre typhoïde Typhoid fever		Méningite cérébro-spinale Cerebro-spinal meningitis		Scarlatine Scarlet fever		Trachome Trachoma	Varicelle Chicken-pox
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	C.
Total	1919	5578	521	6903	1719	430	261		3944	536		46	37	2932	132	111	—
»	1920	5288	508	4212	837	538	345		2761	315		34	20	4635	240	167	—
»	1921	3921	313	4733	778	557	329		4288	404		21	17	4210	126	219	—
»	1922	2807	216	1196	220	412	226		2303	240		38	33	2658	63	320	—
»	1923	2806	261	791	120	400	220		2043	154		38	22	3154	76	379	—
»	1924	3291	115	535	43	288	77		2093	127		39	14	3826	28	341	—
»	1925	3709	132	346	19	313	108	341	12	2252	154	38	13	5785	39	818	3640
Janv.—Jan.	10	145	3	6	0	8	4	0	0	42	3	2	1	180	4	10	26
	17	89	3	3	0	10	2	0	0	24	0	0	0	129	0	20	103
	24	109	4	2	0	8	2	3	0	18	0	0	0	120	2	22	85
	31	85	6	3	0	9	2	0	1	32	2	0	0	122	1	12	53
Févr.—Feb.	7	96	6	8	0	7	5	2	1	16	1	0	1	116	0	12	80
	14	90	3	4	0	6	4	2	0	28	2	1	1	120	1	23	46
	21	97	0	9	0	6	2	0	0	29	0	2	1	106	2	14	96
	28	80	0	1	0	6	3	2	0	17	1	1	1	100	0	11	60
Mars—March	7	91	5	2	1	5	1	5	0	23	1	0	0	126	1	15	105
	14	77	2	6	0	7	5	1	0	16	2	2	0	122	0	16	94
	21	71	1	3	0	9	0	1	0	27	2	1	0	126	0	8	67
	28	92	1	15	1	12	3	5	2	20	0	1	0	134	0	6	72
Avril—April	4	79	3	2	0	7	1	17	0	17	2	1	0	144	1	6	56
	11	95	1	0	0	2	0	6	0	22	2	2	1	133	2	73	78
	18	62	3	1	1	3	0	0	0	35	1	0	0	153	0	4	53
	25	68	2	4	0	6	4	1	0	21	5	1	0	134	0	3	77
Mai—May	2	68	4	5	0	5	2	4	0	18	2	0	0	132	0	15	68
	9	67	2	3	0	8	6	2	0	21	2	0	0	181	1	7	51
	16	48	0	1	0	8	2	1	0	23	2	0	0	152	2	11	65
	23	75	1	3	0	1	1	3	0	30	1	1	0	150	0	30	79
	30	56	4	3	0	4	1	5	0	30	0	0	0	137	1	32	65
Juin—June	6	75	2	1	0	8	3	7	0	36	5	0	0	120	0	9	76
	13	58	3	3	1	2	1	10	0	53	4	0	0	97	1	36	53
	20	54	2	1	0	8	2	11	0	45	1	3	1	111	0	10	49
	27	62	0	3	0	5	2	3	0	52	3	1	0	104	0	14	85
Juillet—July	4	43	3	2	0	5	3	2	0	39	4	0	0	115	0	11	79
	11	50	3	15	3	6	3	8	0	57	6	1	0	102	0	13	38
	18	53	0	3	0	4	1	9	0	49	5	1	0	98	1	6	45
	25	58	2	14	2	5	0	5	0	45	5	0	0	74	0	15	34
Août—August	1	41	0	5	0	6	2	11	0	46	5	0	0	71	0	7	17
	8	40	1	8	0	3	0	14	0	53	2	0	0	72	1	8	42
	15	45	1	6	1	5	6	11	0	60	4	0	0	64	2	5	18
	22	63	0	17	0	5	2	13	0	81	3	1	1	71	1	6	14
	29	66	5	29	3	12	5	25	0	88	5	2	0	72	1	9	14
Sept.—Sept.	5	73	1	18	2	5	1	10	1	77	6	0	1	52	1	8	15
	12	67	2	11	3	7	2	18	0	87	5	0	0	49	0	2	4
	19	59	4	11	0	4	1	15	0	84	9	0	0	89	0	5	3
	26	74	4	10	0	6	3	10	0	85	5	0	0	105	3	4	9
Oct.—Oct.	3	84	1	1	0	6	1	17	0	68	1	1	0	88	0	16	21
	10	57	0	5	0	4	1	1	0	54	1	0	0	132	0	9	37
	17	78	9	5	0	7	3	8	0	53	5	1	0	112	1	7	70
	24	65	1	3	0	1	0	17	0	77	3	1	0	103	1	36	72
	31	92	2	2	0	7	1	5	0	123	7	0	0	128	0	36	84
Nov.—Nov.	7	78	8	8	0	6	2	7	1	42	4	1	0	95	1	38	92
	14	80	4	16	1	5	1	5	0	73	6	3	0	98	1	10	129
	21	73	2	9	0	6	1	7	0	36	3	0	0	123	2	17	129
	28	69	1	2	0	1	0	1	0	38	2	1	0	99	0	20	142
Déc.—Dec.	5	70	3	9	0	9	3	7	0	35	3	1	1	104	0	5	162
	12	68	4	33	0	8	2	9	1	27	2	1	1	110	2	25	164
	19	56	3	4	0	7	0	10	2	34	5	0	0	101	1	8	40
	26	57	3	3	0	2	3	5	2	29	3	2	1	99	0	75	152
1926 Janv.—Jan.	2	61	4	5	0	11	3	0	1	17	1	2	1	110	1	8	272

Autres maladies déclarées: — Other diseases reported:

Année Year	Charbon Anthrax		Fièvre récurrente Relapsing fever	Lèpre Leprosy		Paludisme Malaria		Poliomyélite aiguë Acute Poliomyelitis		Rage humaine Rabies		Tétanos Tetanus		Typhus exanthém. Typhus		Variole Smallpox	
	C.	D.	C.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
1919	1	0	104	0	0	5754	40	1	0	7	4	—	—	996	141	411	96
1920	0	0	0	0	0	—	0	26	0	4	3	—	—	86	10	253	46
1921	8	3	1	0	0	123	0	13	0	11	1	—	—	81	10	18	1
1922	8	1	1	2	1	—	0	10	0	23	8	—	—	23	4	4	0
1923	7	2	0	1	0	—	0	14	0	5	2	—	—	3	0	17	0
1924	7	2	0	0	0	1	0	19	4	3	3	6	4	0	0	0	0
1925	14	3	0	0	0	9	0	15	4	2	2	5	1	0	0	0	0

Décès constatés par le Département de statistique médicale: — Deaths reported by the Medical Statistical Bureau:

Année Year	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre puerpérale Puerperal Fever	Fièvre typhoïde Enteric Fever	Scarlatine Scarlet Fever
1919	691	1819	299	617	220
1920	720	1170	435	382	316
1921	470	1149	434	506	166
1922	364	267	335	318	85
1923	365	152	223	250	97
1924	281	96	251	244	61

Note. — Les cas de trachome signalés dans ce rapport sont pour la plus grande partie des cas anciens qui n'ont été découverts qu'à la suite de recherches systématiques qui furent entreprises, dans le Burgenland en particulier. — Cases of trachoma shown in this report do not refer exclusively to fresh cases but are mostly old cases which were not discovered until a systematic investigation was undertaken, especially in Burgenland.

BELGIQUE — BELGIUM

(Population: 7 684 474. E. 31 décembre 1924.)

Cas de maladies déclarés en 1919-1925; par décades en 1925.
Cases of Communicable Diseases reported in 1919-1925; by ten-day periods in 1925.

Source: Bulletin du Ministère de l'Intérieur et de l'Hygiène du Royaume de Belgique.

Décade se terminant le: Ten-day period ending:	Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite létharg. Encephalitis lethargica	Fièvre paratyphoïde Paratyphoid fever	Fièvre typhoïde Typhoid fever	Méningite cérébro-spinale Cerebro-spinal meningitis	Scarlatine Scarlet fever	Septicémie puerpérale Puerperal septicæmia	Varicelle Chickenpox	Variole et varioloïde Smallpox
Total 1919	8080	132	—	1713		63	2259	37	—	42
» 1920	6409	146	—	1475		38	1985	65	—	91
» 1921	3914	493	243	1429		35	1588	49	—	21
» 1922	2279	34	26	1090		50	1496	47	—	23
» 1923	2353	93	27	127	1277	56	2008	49	1	31
» 1924	1645	21	22	105	802	34	1252	42	56	31
» 1925	1389	29	54	122	891	62	762	18	15*	12
Janvier — 10	47	0	5	0	11	2	16	1	0	0
January 20	35	2	6	2	8	1	18	1	0	1
31	66	0	5	2	10	2	36	0	0	0
Février — 10	36	0	5	2	15	2	14	0	0	3
February 20	58	0	6	2	9	1	23	2	1	1
28	39	0	4	7	9	0	23	0	0	0
Mars — 10	32	1	1	1	16	1	27	1	0	0
March 20	42	0	2	0	24	3	33	3	0	0
31	48	0	3	2	16	3	28	0	0	0
Avril — 10	41	0	0	2	18	3	22	2	4	1
April 20	26	0	1	0	8	0	24	0	0	0
30	23	1	0	2	7	7	12	0	0	0
Mai — May 10	48	1	0	7	15	3	26	0	0	0
20	43	0	0	7	16	3	22	2	0	0
31	34	0	1	0	15	3	28	2	0	1
Juin — June 10	30	2	1	7	23	1	18	0	0	0
20	32	0	0	3	27	0	8	0	0	1
30	31	1	6	2	34	3	15	1	0	2
Juillet — July 10	44	0	0	2	54	2	13	0	0	0
20	48	0	2	7	53	3	9	0	0	0
31	53	1	1	5	33	1	15	0	épid.	0
Août — 10	33	1	0	3	28	1	20	0	0	0
August 20	31	4	1	4	26	0	27	1	0	2
31	32	7	0	3	46	0	21	0	0	0
Septembre — 10	32	2	0	0	66	3	23	0	0	0
September 20	31	3	1	4	34	0	14	0	0	0
30	27	1	0	6	36	1	14	0	0	0
Octobre — 10	32	2	0	17	35	3	20	0	0	0
October 20	18	0	0	9	29	1	19	0	0	0
31	49	0	0	3	41	5	27	1	0	0
Novembre — 10	39	0	0	2	24	0	21	0	0	0
November 20	39	0	2	1	25	2	23	0	9	0
30	42	0	0	1	19	2	15	1	0	0
Décembre 10	57	0	0	3	25	0	22	0	épid.	0
December 20	32	0	1	4	27	0	29	0	0	0
31	39	0	0	0	9	0	37	0	1	0

Autres maladies déclarées: — Other diseases reported:

		1919	1920	1921	1922	1923	1924	1925
Rage humaine.	Rabies.	4	1	1	0	1	0	0
Typhus exanth.	Typhus.	23	9	11	7	0	0	0

* En outre, épidémie sans indication du nombre des cas. — Epidemic, exact number of cases unknown.

BULGARIE — BULGARIA

(Population: 5 057 800 E. 30 Juin 1925.)

Source: Bulletin sur l'état des maladies infectieuses dans le Royaume de Bulgarie.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Dé Dec
Coqueluche	Whooping-cough	C.	4979	2277	3636	7765	7717	291	350	903	635	743	926	816	964	496	538	525	530
		D.	340	199	212	459	523	17	22	52	50	63	71	61	69	39	19	24	36
Diphtérie	Diphtheria	C.	1054	795	1094	1505	1557	142	130	122	77	52	52	38	77	142	225	227	273
		D.	151	108	157	228	184	18	24	12	7	8	5	4	8	14	21	22	41
Dysenterie	Dysentery	C.	569	740	489	389	251	2	2	9	4	1	8	62	81	52	15	14	1
		D.	103	122	106	76	53	1	0	2	1	0	1	13	19	12	1	2	1
Encéphalite léthar.	Encephalitis lethar.	C.	—	—	—	—	13	—	—	—	—	—	—	—	5	2	2	1	3
		D.	—	—	—	—	3	—	—	—	—	—	—	—	0	2	0	0	1
Erysipèle	Erysipelas	C.	967	239	301	278	171	13	12	8	13	5	10	7	7	17	25	33	21
		D.	44	20	17	14	10	0	2	1	0	0	1	1	0	0	3	1	1
Fièvre typhoïde	Enteric fever	C.	1915	2867	2799	7127	3444	611	241	142	82	72	78	82	291	526	485	452	382
		D.	222	301	326	816	465	131	65	23	14	12	7	10	18	45	39	44	57
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	36	6	12	13	16	2	2	1	4	2	2	0	1	1	1	0	0
		D.	22	3	6	9	6	0	0	1	1	2	1	0	0	0	0	0	1
Oreillons	Mumps	C.	7434	1034	739	235	766	70	127	123	74	46	15	7	6	10	16	123	149
		D.	5	4	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Rougeole	Measles	C.	25710	8700	10264	7393	31307	1688	3475	5786	5119	4974	2223	774	193	253	605	2616	3601
		D.	1896	434	504	293	854	23	82	152	237	132	51	34	13	5	6	20	99
Scarlatine	Scarlet fever	C.	6062	7196	15585	7466	3447	294	278	224	213	149	125	138	177	364	451	557	477
		D.	1453	1211	2935	1360	468	57	46	54	49	23	32	17	19	29	41	57	44
Typhus exanthém.	Typhus	C.	374	488	413	197	217	12	4	20	10	18	64	27	12	15	11	3	21
		D.	99	68	51	28	15	0	1	1	1	2	2	3	2	1	1	0	1
Varicelle	Chickenpox	C.	802	412	353	485	615	57	48	146	50	41	17	26	4	9	5	82	130
		D.	26	1	1	2	3	0	0	1	2	0	0	0	0	0	0	0	0
Variole	Smallpox	C.	22	24	20	5	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	5	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note. Les données mensuelles sont provisoires; les totaux annuels sont corrigés. — The weekly figures are provisional; the totals for the year are correct figures.

DANEMARK — DENMARK

(Population: 3 403 300. E. 1er juillet 1925.)

Sources: Skematisk Sygeliste for Kongeriget Danmark 1925. Medicinal beretning for den danske Stat 1921-1924.

Maladie — Disease		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*																	
Angine	Tonsillitis	59702	46927	44396	43767	53482	4303	4046	4112	4093	3569	3279	3939	4460	5326	5576	5505	5274
Bronchite aiguë	Acute bronchitis	56955	71822	78288	70661	72416	7005	7486	9054	9065	6519	4947	3659	2443	3777	4784	5769	7908
Broncho-pneumonie	Broncho-pneumonia	19488	23559	23788	21579	20711	1707	1819	2543	2837	2259	1599	1296	827	1013	1234	1442	2135
Charbon	Anthrax	0	0	1	8	3	0	0	1	0	0	0	0	0	0	2	0	0
Choléra nostras et entérite	Cholera nostras and enteritis	25571	22202	20183	24361	34116	1946	1548	1348	1385	1510	2122	5938	9027	4353	1756	1403	1780
Coqueluche	Whooping-cough	5037	22060	26446	8443	20528	1538	1882	2208	1998	1709	1881	1788	1342	1339	1361	1797	1685
Diphtérie	Diphtheria	13945	7929	5692	5241	5102	770	572	493	372	335	281	257	242	328	450	527	475
Delirium tremens	Delirium tremens	51	43	63	61	54	7	1	5	4	5	4	1	8	6	7	5	3
Dysenterie	Dysentery	2	3	2	1	2	0	0	0	0	0	0	0	2	0	0	0	0
Encéphalite léthargique	Encephalitis lethargica	138	42	87	107	147	19	22	23	18	8	4	10	10	11	8	9	5
Erysipèle	Erysipelas	3742	2994	2743	2524	2981	227	236	210	225	200	226	229	222	273	346	294	293
Fièvre aphteuse	Foot-and-mouth disease	0	0	0	12	16	1	3	3	2	2	4	0	1	0	0	0	0
Septicémie puerpérale	Puerperal fever	329	258	244	240	217	14	15	17	23	19	13	12	12	17	24	21	30
Fièvre paratyph.	Paratyph. fever	127	236	292	152	96	3	4	4	0	10	25	14	9	13	5	5	4
Fièvre typhoïde	Typhoid fever	295	241	268	330	247	16	11	9	13	12	25	26	54	47	15	10	9
Gale	Scabies	17049	11926	9305	7562	5786	763	606	538	427	386	342	285	313	496	541	483	606
Grippe	Influenza	20153	237635	79648	73098	58929	5705	5958	8830	12772	8108	3030	1806	1678	2022	2488	2865	3667
Hoquet épidém.	Epid. hiccoughs	372	44	234	572	795	368	271	95	35	11	5	1	0	2	3	3	1
Méningite cérébro-spinale	Cerebro-spinal meningitis	92	84	96	129	138	13	12	6	13	16	9	22	9	12	6	12	8
Oreillons	Mumps	7503	3293	3941	3174	672	179	174	180	166	93	104	74	62	68	111	206	255
Paludisme	Malaria	23	28	14		19	2	2	0	0	2	2	3	0	4	2	1	1
Paradysenterie	Para-dysentery	—	—	—	9	16	6	1	0	0	0	0	0	0	0	7	1	1
Pemphigus des nouveau-nés	Pemphigus of new-born	130	105	89	104	96	3	6	10	7	5	7	6	12	14	13	8	5
Pneum. croupale	Croupous pneum.	6253	5736	5673	4735	4309	382	373	468	545	424	324	293	230	226	298	345	401
Poliomyélite aiguë	Acute poliomyelitis	70	59	76	152	115	7	14	3	1	2	4	9	20	26	19	7	3
Rhumatisme articulaire	Rheumatic fever	4336	3952	3660	3334	3801	343	300	339	332	345	260	247	234	278	330	360	433
Rougeole	Measles	5181	9596	32166	33856	12801	557	918	1185	931	894	734	512	251	460	1232	2046	3081
Scarlatine	Scarlet fever	11093	5109	3851	3084	2752	301	214	203	184	150	137	192	170	305	321	324	251
Tétanos des nouveau-nés	Tetanus of new-born	65	67	75	65	67	2	4	5	9	11	4	6	7	6	5	3	5
Tuberculose pulmonaire	Pulmonary tuberculosis	3186	3012	2893	3307	3265	286	305	324	356	326	326	285	225	243	238	240	211
Variole	Smallpox	7	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0
Chancre mou	Soft chancre	771	502	404	306	266	31	27	18	22	22	20	19	30	19	27	15	16
Gonorrhée	Gonorrhœa	11182	10466	11115	11050	1788	966	871	850	904	824	837	1073	1235	1201	1167	1016	844
Syphilis	Syphilis	3955	2611	2496	2431	2161	251	201	227	211	178	138	158	180	122	189	166	140

Note. — Les données pour 1925 sont provisoires. — Data for 1925 are provisional.

DANTZIG — DANZIG

(Population: 383 995. E. 31 août 1924.)

Source: Rapports du (Reports from) Gesundheitsverwaltung der Freien Stadt Danzig.

Semaine se terminant le: Week ending:			Diphtérie Diphtheria		Fièvre puerpérale Puerperal fever		Fièvre typhoïde Enteric fever		Scarlatine Scarlet fever		Trachome Trachoma	Tuberculose du larynx et des poumons Tuberculosis of the larynx and the lungs
			C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Total 1919 . .			294	27	30	13	49	5	207	12	23	266
» 1920 . .			322	16	95	28	244	12	234	10	43	259
» 1921 . .			284	18	68	8	179	19	214	11	38	238
» 1922 . .			155	6	48	14	74	11	133	3	11	259
» 1923 . .			135	8	29	6	130	13	262	27	15	253
» 1924 . .			167	10	30	13	144	10	520	44	54	250
» 1925 . .			104	5	38	10	119	16	426	19	49	264
Janvier	January	10	5	0	1	0	2	0	7	0	0	10
		17	6	0	2	0	5	1	11	0	1	2
		24	3	1	0	0	2	0	7	0	1	6
		31	6	1	0	0	5	0	4	0	0	2
Février	February	7	3	0	2	0	3	1	8	0	1	4
		14	1	0	0	0	5	0	8	0	0	4
		21	1	0	0	0	0	1	3	0	0	10
		28	4	1	1	0	0	0	8	0	0	6
Mars	March	7	2	0	2	0	4	0	4	1	3	7
		14	2	0	0	0	3	0	0	0	2	7
		21	3	0	1	0	0	0	4	1	1	6
		28	2	0	2	1	3	1	5	0	0	6
Avril	April	4	1	0	0	0	1	0	5	3	0	6
		11	1	0	2	0	1	0	1	0	0	14
		18	0	0	3	2	1	0	5	0	0	3
		25	2	0	0	0	1	0	5	0	1	3
Mai	May	2	4	0	0	0	1	0	2	0	0	7
		9	1	0	0	0	0	0	2	0	0	4
		16	1	0	0	0	1	1	0	0	0	4
		23	4	0	1	0	3	1	6	0	0	5
		30	1	0	1	2	5	3	3	1	3	3
Juin	June	6	2	0	1	0	0	1	0	0	0	6
		13	1	0	0	0	0	0	12	0	1	4
		20	1	0	0	0	2	0	2	0	2	4
		27	0	0	0	0	1	0	14	2	1	5
Juillet	July	4	1	0	0	0	2	0	3	0	3	4
		11	1	0	1	0	7	0	6	1	4	5
		18	0	0	0	0	2	0	9	1	1	2
		25	0	0	0	0	1	0	4	0	0	3
Août	August	1	2	1	0	0	2	0	7	0	3	5
		8	3	0	0	0	3	0	4	1	0	1
		15	2	0	2	1	4	0	7	0	1	8
		22	2	0	1	0	1	0	7	0	1	4
		29	1	0	1	1	8	1	14	1	1	6
Septembre	September	5	1	0	1	0	8	2	15	1	1	4
		12	0	0	2	0	5	0	12	1	4	6
		19	3	0	1	0	2	0	8	0	0	5
		26	5	0	0	1	3	1	12	0	0	4
Octobre	October	3	1	0	0	0	1	0	16	0	1	5
		10	1	0	1	0	2	0	5	0	0	5
		17	4	0	0	0	1	0	12	0	0	8
		24	2	0	1	1	2	0	18	0	1	5
		31	1	0	1	0	4	0	16	0	1	3
Novembre	November	7	3	0	2	0	3	0	9	0	3	4
		14	0	0	0	0	1	0	21	2	1	3
		21	0	0	1	0	3	0	13	0	3	2
		28	1	0	1	1	0	1	17	1	1	9
Décembre	December	5	3	0	0	0	2	0	19	1	0	5
		12	6	1	1	0	1	0	5	0	0	4
		19	0	0	1	0	1	1	24	0	1	7
		26	0	0	1	0	0	0	4	0	0	3
1926 Janvier	January	2	4	0	0	0	1	0	13	1	1	6

Autres maladies déclarées: — Other diseases notified:

Année Year	*Anthrax* Anthrax		*Botulisme* Botulism		*Dysenterie* Dysentery		*Fièvre récurr.* Relapsing fever		*Mén. cér.-spin.* Cer.-spin. men.		*Rage humaine* Rabies		*Typhus exanth.* Typhus		*Varicelle* Chickenpox		*Variole* Smallpox	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
1919	0	0	1	0	12	4	0	0	2	0	0	0	39	7	0	0	185	36
1920	0	0	0	0	43	6	2	0	4	1	2	1	7	2	0	0	22	3
1921	0	0	0	0	21	1	1	0	0	1	0	0	0	0	0	0	0	0
1922	0	0	6	1	5	1	0	0	0	0	0	0	3	1	7	0	0	0
1923	1	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0
1924	0	0	2	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0
1925	0	0	0	0	5	1	0	0	2	1	0	0	0	0	0	0	0	0

ÉCOSSE (16 villes) — SCOTLAND (16 Towns)

(Population 2 414 500. E. 30 juin 1925.)

Cas de certaines maladies infectieuses déclarés dans 16 villes principales en 1924-1925; par semaines en 1925.
Cases of Certain Infectious Diseases notified in 16 Principal Towns in 1924-1925; by Weeks in 1925.

Source: Weekly Abstract from the Scottish Board of Health.

Semaine se terminant le: Week ending:	* Coqueluche *Whooping-cough	Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite létharg. Encephalitis letharg.	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Méningite cér.-spin. Cer.-spin. meningitis	Ophtalmie des nouveau-nés Ophthalmia neonatorum	Paludisme Malaria	Pneumonie grippale aiguë Acute influenzal pneumonia	Pneumonie primaire aiguë Acute primary pneumonia	*Poliomyélite aiguë *Acute poliomyelitis	*Rougeole *Measles	Scarlatine Scarlet fever	Tuberculose, toutes formes Tuberculosis, all forms	*Varicelle *Chickenpox
Total 1924	13930	4257	41	631	1788	395	210	170	950	46	1124	8996	16	14363	9024	6753	6904
Total 1925	16520	4673	35	206	2041	461	236	157	875	45	643	8379	13	10385	11388	6416	9549
Janvier-January 10	774	111	0	11	40	12	2	1	17	2	28	244	0	263	213	133	222
17	783	94	1	4	31	9	5	4	15	1	29	202	1	173	225	151	218
24	596	107	0	3	39	14	2	1	21	0	30	191	0	172	226	152	208
31	538	108	1	4	43	10	5	7	14	1	28	176	0	140	255	137	165
Février-February 7	614	115	0	6	30	6	2	1	16	0	29	158	0	409	240	127	163
14	610	103	1	7	39	13	1	1	25	0	21	138	1	268	204	135	166
21	584	104	0	9	42	11	8	1	17	1	21	123	0	324	178	131	184
28	664	92	2	6	48	10	2	0	15	1	17	138	0	317	218	145	176
Mars-March 7	645	110	1	9	45	13	8	3	14	0	14	127	0	269	214	136	193
14	621	94	2	7	31	6	3	5	18	0	14	152	0	216	197	135	223
21	599	110	0	7	42	9	2	9	21	2	15	157	0	179	223	152	231
28	573	119	1	5	37	11	2	4	19	2	13	138	1	194	206	151	276
Avril-April 4	611	74	2	4	47	9	4	4	19	0	15	126	1	154	221	144	281
11	456	91	0	2	23	6	3	3	21	1	13	135	0	103	171	117	170
18	328	83	0	5	35	7	8	5	23	1	32	151	0	113	186	161	130
25	617	71	1	6	37	11	5	2	14	0	10	126	1	123	163	158	295
Mai-May 2	661	95	0	5	39	9	3	0	16	0	6	146	1	132	191	153	332
9	515	85	1	3	32	7	4	3	24	0	3	129	0	92	203	155	265
16	497	83	0	8	34	2	4	6	20	0	4	153	0	124	178	162	339
23	388	68	0	6	46	7	2	3	21	1	12	112	0	78	187	139	250
30	423	74	1	3	32	12	2	2	22	2	3	106	0	86	163	169	398
Juin-June 6	390	84	0	7	29	6	3	5	17	3	7	99	1	93	169	118	334
13	387	81	1	7	40	7	4	2	11	0	3	128	0	112	161	135	269
20	301	85	0	2	29	11	3	3	9	0	6	116	1	73	144	140	201
27	293	97	0	6	32	5	4	1	17	1	10	103	0	58	143	140	143
Juillet-July 4	168	77	4	1	32	9	2	1	32	0	4	104	0	24	136	109	57
11	154	73	0	0	26	5	3	6	22	1	5	124	0	24	156	89	40
18	144	52	0	1	24	4	3	2	16	2	0	64	2	29	126	108	27
25	111	59	0	0	27	6	5	6	14	1	4	86	0	18	127	119	42
Août-August 1	80	50	0	0	22	5	3	3	10	1	10	65	0	22	117	91	45
8	122	54	0	8	28	10	8	3	9	1	5	74	0	17	146	109	38
15	190	64	1	2	19	6	27	4	18	1	3	76	0	31	157	98	47
22	269	69	2	0	32	13	13	2	7	2	3	61	0	47	182	108	114
29	217	72	4	2	23	7	7	1	20	2	2	89	0	48	191	81	85
Sept.-Sept. 5	131	75	1	4	34	8	7	0	18	1	9	89	1	39	186	98	64
12	113	82	0	2	21	4	7	2	18	2	5	80	0	43	193	113	117
19	65	98	0	2	42	9	3	2	11	1	3	114	1	63	278	95	76
26	91	97	0	2	54	18	6	3	14	0	4	136	0	90	300	115	153
Octobre-October 3	72	58	0	4	53	8	4	2	16	0	3	134	0	79	245	112	126
10	119	101	1	1	45	8	8	4	17	0	8	202	0	209	381	105	196
17	82	123	1	4	51	10	8	6	18	2	10	219	0	178	335	110	235
24	108	114	0	8	47	10	3	3	21	1	12	268	0	238	359	113	165
31	101	106	0	3	59	8	3	3	19	0	21	323	0	332	325	125	266
Nov.-Nov. 7	111	115	1	6	54	12	2	1	14	0	21	298	0	440	367	110	234
14	83	106	1	0	58	6	4	6	8	1	21	281	0	397	348	107	224
21	83	101	0	1	59	13	5	1	12	2	14	252	0	484	343	87	226
28	106	119	1	1	51	12	2	2	18	1	15	360	0	552	265	108	251
Déc.-Dec. 5	86	97	1	2	56	9	1	2	16	1	14	310	0	630	272	121	220
12	72	105	0	1	67	11	3	4	15	1	15	329	0	604	250	115	219
19	78	101	2	4	51	7	4	6	19	1	26	297	0	794	245	111	260
26	64	77	0	3	48	8	1	2	16	0	11	222	0	438	217	90	120
1926 Janv.-Jan. 2	32	90	0	2	36	12	3	4	11	1	12	148	1	250	262	93	70

Autres maladies déclarées: — Other diseases reported:

	Charbon Anthrax	Fièvre continue Continued fever	Jaunisse infectieuse aiguë Acute infective jaundice	Polio-encéphalite aiguë Acute polio-encephalitis	Typhus exanthématique Typhus	Variole Smallpox
1925. .	3	23	9	3	13	2

* La déclaration n'est pas obligatoire dans toutes les villes. — Notification is not compulsory in every town..

ÉCOSSE — SCOTLAND

(Population: 4 893 032. E. 30 juin 1925.)

Sources: Rapport spécial de l'Administration sanitaire; Rapports annuels du Registrar-Général, 1919-1924; Quarterly Returns of Births, Deaths and Marriages, 1925; Special Report from the Scottish Board of Health; Annual Reports of the Registrar-General, 1919-1924; Quarterly Returns of Births, Deaths and Marriages, 1925.

Maladie — Disease		Cas — Cases							Décès — Deaths						
		1919	1920	1921	1922	1923	1924	1925*e*	1919	1920	1921	1922	1923	1924	1925
d Charbon	*d* Anthrax	—	1	—	—	—	—	3	1	1	1	0	1	1	1
Choléra asiatique	Asiatic cholera	1	0	0	0	0	0	0	0	0	0	0	0	0	0
d Coqueluche	*d* Whooping-cough	262	250	326	12	—	4605	16250	1573	628	1478	1408	989	1625	1737
Diarrhée infantile	Infant. diarrhœa	—	—	—	—	—	—	—	1015	1287	1527	892	790	830	876
Diphtérie	Diphtheria	9078	10766	10112	7372	7106	6827	4673	727	724	625	550	500	442	505
Dysenterie	Dysentery	217*a*	276	108	42	60	42	35	32.	18	22	8	5	9	7
d Encéphalite léthargique	*d* Encephalitis lethargica	2	0	3	20	110	414	206	—	91	61	45	125	181	154
Erysipèle	Erysipelas	3007	3642	3644	3373	3354	2916	2041	121	170	209	174	162	136	150
Fièvre continue	Continued fever	14	26	15	16	45	26	23	—	—	—	—	—	—	—
Fièvre des tranchées	Trench fever	31*a*	6	2	0	2	0	0	—	—	—	—	—	—	—
Fièvre puerpérale	Puerperal fever	342	587	624	586	580	552	461	150	242	250	228	218	184	171
Fièvre typhoïde	Enteric fever	634	743	595	439	794	486	236	84*f*	100*f*	89*f*	67*f*	76*f*	40*f*	58*f*
d Méningite cérébro-spinale	*d* Cerebro-spinal meningitis	191	86	121	116	114	118	157	128	115	102	103	92	87	83
Ophtalmie des nouveau-nés	Ophthalmia neonatorum	1431	1871	1897	1485	1390	1289	875	—	—	—	—	—	—	—
Paludisme	Malaria	2856*a*	1989	308	117	88	75	45	27	33	18	7	8	9	9
Pneumonie primaire aiguë	Acute primary pneumonia	1913	9155	7854	13951	9039	15264	8379	6742	5987	4940	6617	4674	6706	5393
Pneumonie grippale aiguë	Acute influenzal pneumonia							643	4352	702	453	1648	166	985	428
d Polio-encéphalite	*d* Polio-encephalitis	30	3	2	2	1	3	3	—	—	17	21	10	11	21
d Poliomyélite aiguë	*d* Acute poliomyelitis	25	11	45	32	6	28	13							
d Rougeole	*d* Measles	1510	2037	177	3266	554	1737	10385	899	816	269	2695	1118	1592	512
Scarlatine	Scarlet fever	12787	17449	17025	14589	16754	18047	11388	222	245	270	247	352	410	404
Tuberculose pulmonaire	Pulmonary tuberculosis	7572*a*	8099	8030	7752	7080	7360	3764	4294*b*	4194*b*	3970*b*	4061*b*	3996*b*	3887*b*	3733*b*
Tuberculose, autres formes	Non-pulmonary tuberculosis	4017	4169	4442	4594	5203	5096	2652	2032	1848	1767	1757	1794	1766	1656
Typhus exanth.	Typhus	38	79	9	42	2	0	13	8	16	4	7	1	0	4
c Varicelle	*c* Chickenpox (I)	—	5737	10427	—	6071	—	—	10	11	10	12	18	17	—
	(II)	—	5987	57	82	69	583	9549	—	—	—	—	—	—	—
Variole	Smallpox	9	725	106	7	3	4	2	0	152	24	0	0	0	0

a. A déclaration obligatoire depuis le 1er août 1919. — Compulsorily notifiable from August 1st, 1919.
b. Tuberculose du système respiratoire. — Tuberculosis of the respiratory system.
c. La déclaration de la varicelle était obligatoire dans toute l'Ecosse, du 1er octobre 1920 au 30 septembre 1921 et du 23 juillet 1923 au 31 décembre de la même année, et les déclarations reçues pour ces périodes sont données sous la rubrique (I). Les données sous la rubrique (II) concernent les périodes pendant lesquelles la déclaration n'était obligatoire que dans certains districts. — Chickenpox was compulsorily notifiable throughout Scotland from October 1st, 1920, to September 30th, 1921, and from July 23rd, 1923, to December 31st of the same year, and the notifications received for those periods are shown under (I). The figures under (II) relate to periods when notification was compulsory only in certain areas.
d. La déclaration des cas n'est pas obligatoire dans toutes les villes ou régions. Le nombre des régions où la déclaration est obligatoire varie chaque année. — Notification of cases not compulsory in every town or other public health area. The areas in which notification is compulsory vary annually.
e. Renseignements pour les 16 villes principales. — Data for 16 principal towns.
f. Y compris les décès dus à la fièvre typhoïde. — Deaths from paratyphoid fever included.

ESPAGNE — SPAIN

(Population: 21 966 600. E. 31. XII. 1924.)

Source: Boletín Demografico de España

Cause de décès Cause of Death		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Bronchite aiguë	Acute bronchitis	21043	22034	21328	21705	20239	2081	2492	2893	2320	1707	1264	1144	941	909	1132	1364	1992
Coqueluche	Whooping-cough	1578	1238	2019	2179	1762	163	139	200	180	179	166	181	153	136	101	67	97
Diarrhée et entérite 0-2 ans	Diarrhœa and enterit., 0-2 years	53954	46888	53127	46088	47478	1726	1631	1850	1855	2671	5022	9373	8823	5969	3976	2605	1977
Diphtérie	Diphtheria	3052	2937	2268	2027	1406	152	150	167	111	89	75	67	86	92	136	132	149
Fièvre typhoïde	Typhoid fever	7061	5528	5202	4663	4218	277	236	227	224	233	250	381	484	614	543	405	344
Grippe	Influenza	5837	7992	8367	7035	6293	640	1026	1384	1070	586	310	188	133	150	192	234	380
Méningite	Meningitis	17693	17248	17291	15697	14229	1127	1087	1277	1222	1292	1371	1562	1486	1017	976	888	924
Paludisme	Malaria	1912	1518	1290	1195	925	61	37	58	57	77	70	94	140	116	104	63	48
Pneumonie	Pneumonia	10535	10252	10184	9762	9247	1004	1037	1162	926	672	569	504	465	491	689	755	973
Rougeole	Measles	5449	6513	3954	4422	4822	320	397	554	466	562	576	567	361	198	184	318	319
Scarlatine	Scarlet fever	847	638	459	296	180	13	10	8	12	9	6	14	11	14	24	28	31
Septicémie puerp.	Puerp. septicæmia	2064	2075	1863	1765	1569	180	141	160	133	111	132	92	111	118	121	126	144
Tuberculose pulmonaire	Pulmonary tuberculosis	26870	27337	27261	27616	27260	2400	2331	2669	2424	2461	2261	2302	2084	2058	1994	2100	2176
Tuberculose, autres formes	Tuberculosis, other forms	6605	6116	6216	6112	6327	493	474	522	534	608	609	614	570	510	502	470	421
Typhus exanthém.	Typhus	73	80	35	20	10	1	1	0	1	1	2	1	1	0	1	0	1
Variole	Smallpox	2097	1325	525	1214	851	162	95	65	74	54	56	28	33	62	97	74	51

Trois décès causés par le choléra asiatique en 1921. — Three deaths from Asiatic cholera in 1921.

ESTHONIE — ESTHONIA

(Population: 1 114 630. E. 1 jan. 1925.)

Sources: Bulletin du Service d'Hygiène publique, Rapport sur les maladies épidémiques dans la République Esthonienne E. V. Tervishoiu peavalitsuse Arvanne, 1921 - 1925.

Maladie — Disease		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec
Cas	*Cases*																	
Anthrax	Anthrax	1	0	5	0	3	0	0	1	1	0	0	1	0	0	0	0	0
Botulisme	Botulism	0	0	8	21	3	0	0	0	0	0	0	0	1	0	0	1	1
Coqueluche	Whooping-cough	215	1417	928	60	224	0	1	1	2	6	1	10	6	24	42	65	66
Diphtérie	Diphtheria	825	517	408	461	545	83	48	40	17	44	33	30	28	56	63	62	41
Dysenterie	Dysentery	1198	356	64	125	38	4	4	0	1	0	1	2	16	10	0	0	0
Encéphalite léth.	Encephalitis leth.	9	0	16	5	5	0	0	2	0	0	2	0	1	0	0	0	0
Fièvre puerpérale	Puerperal fever	28	40	23	24	24	2	2	4	1	3	2	3	1	2	0	1	3
Fièvre récurrente	Relapsing fever	118	104	8	1	2	0	0	0	0	2	0	0	0	0	0	0	0
Fièvre paratyph.	Paratyphoid fever	78	110	75	169	250	10	19	17	26	29	23	36	24	29	16	7	14
Fièvre typhoïde	Typhoid fever	1097	718	623	937	804	29	121	69	57	47	50	72	98	51	88	69	53
Lèpre	Leprosy	49	37	34	13	36	1	5	6	8	3	1	3	1	2	3	1	2
Méningite cérébro-spinale	Cerebro-spinal meningitis	12	14	12	12	7	1	2	1	0	0	0	2	0	0	0	1	0
Rage humaine	Rabies	5	2	2	4	1	0	0	0	0	0	1	0	0	0	0	0	0
Rougeole	Measles	1785	2811	1930	203	82	12	8	4	5	29	6	4	1	3	1	4	3
Scarlatine	Scarlet fever	1433	583	675	451	775	30	51	51	36	34	33	32	51	57	98	134	168
Trachome	Trachoma	492	467	513	528	471	36	41	91	44	60	38	16	30	30	44	30	11
Trichinose	Trichinosis	2	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Tuberculose	Tuberculosis	72	71	1525	1812	1809	204	235	237	153	179	119	121	85	106	137	119	114
Typhus exanth.	Typhus	356	247	63	43	21	9	1	2	4	2	2	1	0	0	0	0	0
Varicelle	Chickenpox	56	81	116	39	0	0	0	0	0	0	0	0	0	0	0	0	0
Variole	Smallpox	136	50	13	4	5	1	0	0	0	1	0	0	0	0	0	3	0

ÉTAT LIBRE D'IRLANDE — IRISH FREE STATE

(Population: 3 163 000. E. 30 juin 1925.)

Source: Quarterly Return of Marriages, Births and Deaths.

Cause de décès — Cause of death		Total 1922	Total 1923	Total 1924	Total 1925 **	1925 Trimestre — Quarter I	II	III	IV
Coqueluche	Whooping-cough	201	454	621	413	121	151	85	56
Diarrhée et entérite, 0-2 ans	Diarrhœal diseases, 0-2 years	443	513	515	620	109	87	294	130
Diphtérie	Diphtheria	401	285	186	156	44	33	24	55
Dysenterie	Dysentery	9	15	4	12	0	6	4	2
Fièvre typhoïde	Enteric fever	96	142	123	102	23	22	21	36
Grippe	Influenza	1812	621	2073	1148	588	341	98	121
Rougeole	Measles	458	171	198	205	15	70	55	65
Scarlatine	Scarlet fever	73	66	65	71	21	18	9	23
Tuberculose, toutes formes	Tuberculosis, all forms	4614	4468	4582	4514	1192	1361	1010	951
Typhus exanth.	Typhus	18	19	5	9	3	3	2	1

* Les données pour 1925 sont provisoires. — Data for 1925 are provisional.

FRANCE

(Population: 39 209 766. R. 6 mars 1921.)

Source: Rapport du Ministère de l'Hygiène. — Report from Ministry of Health.

Maladie — Disease		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*																	
Choléra et maladies cholériformes	Cholera and choleriform diseases	99	32	21	19	22	0	1	0	0	1	1	5	5	3	3	2	1
Diphtérie	Diphtheria	16981	12624	11033	11569	12096	1248	1224	1178	1101	1162	1091	953	692	607	842	920	1078
Dysenterie	Dysentery	1852	167	239	170	148	3	6	5	4	6	11	19	44	17	14	5	14
a) Fièvre ondul.	*a*) Undul. fever	—	—	—	74	110	4	5	5	14	19	24	12	3	12	3	1	8
Infections puerpérales	Puerperal infections	436	168	202	278	215	20	17	23	20	32	17	17	11	9	17	13	19
Fièvres typh. et paratyph.	Enteric fever	8116	4787	6297	6493	6787	502	470	426	396	537	458	681	674	791	742	563	547
Méningite cérébro-spinale	Cerebro-spinal meningitis	398	379	381	562	653	80	63	85	70	73	54	39	35	36	34	41	43
Ophtalmie d. nouveau-nés	Ophthalmia neonatorum	44	31	23	20	17	1	0	0	0	1	2	2	3	1	0	1	6
Peste	Plague	0	3	14	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Poliomyélite	Poliomyelitis	211	165	175	216	222	10	18	16	17	11	8	15	39	19	25	20	24
Rougeole	Measles	16644	12019	34585	12838	35351	2063	3151	4430	4615	4862	5919	4005	1362	591	1133	1489	1731
Scarlatine	Scarlet fever	13667	7435	5254	6595	7985	638	585	733	699	828	698	828	473	342	594	696	871
Suette miliaire	Miliary fever	433	63	23	15	20	1	0	0	6	1	0	2	4	1	1	2	2
a) Trachome	*a*) Trachoma	—	—	—	73	54	5	2	1	17	8	4	5	0	6	2	2	2
Typhus exant.	Typhus	17	15	8	9	4	0	0	0	0	0	0	1	3	0	0	0	0
Variole et varioloïde	Smallpox and varioloid	341	172	195	210	456	10	37	11	11	18	25	49	42	25	66	85	77

a A déclaration obligatoire depuis le 1er avril 1924. — Compulsorily notifiable from April 1st, 1924.

FINLANDE — FINLAND

(Population: 3 495 186. E. 31 déc. 1924.)

Cas de maladies à déclaration obligatoire signalés en 1919-1925; par quinzaines en 1925.
Cases of Notifiable Diseases reported in 1919-1925; by Half-months in 1925.

Sources: Conspectus Morborum contagiosorum in Republica Finlandensi, 1923–1925. — Rapports spéciaux pour les années 1919-1922. Special Reports for the years 1919-1922.

Quinzaine: Half-month period:			Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalitis lethargica	Fièvre paratyphoïde Paratyphoid fever	Fièvre typhoïde Typhoid fever	Poliomyélite aiguë Acute poliomyelitis	Scarlatine Scarlet fever
Total 1919			8851	573	—	2569		12	7395
» 1920			6330	573	239 *a*	1499		19	1970
» 1921			3940	395	1095	1356		15	1359
» 1922			1941	209	46	1298		31	990
» 1923			1793	192	83	1653		47	1148
» 1924			1306	189	43	1054	633	45	1842
» 1925			1237	175	31	664	891	28	1697
Janvier	January	1-15	55	0	2	36	28	2	87
		16-31	56	2	4	20	62	1	93
Février	February	1-15	58	1	5	15	51	0	86
		16-28	42	1	2	14	27	2	83
Mars	March	1-15	51	5	2	13	22	0	113
		16-31	65	1	3	18	31	1	81
Avril	April	1-15	52	0	0	40	50	1	77
		16-30	68	0	0	2	55	1	58
Mai	May	1-15	51	0	0	5	27	1	86
		16-31	52	2	0	10	30	3	84
Juin	June	1-15	41	2	0	19	18	2	57
		16-30	34	0	7	25	27	0	54
Juillet	July	1-15	25	24	0	18	25	1	34
		16-31	18	43	0	41	30	1	26
Août	August	1-15	26	9	0	58	48	1	31
		16-31	28	54	1	116	55	0	31
Septembre	September	1-15	30	12	0	43	42	3	25
		16-30	53	10	0	54	45	3	47
Octobre	October	1-15	56	0	1	11	80	0	42
		16-31	79	1	2	31	53	4	71
Novembre	November	1-15	66	7	1	18	16	0	87
		16-30	78	1	0	15	36	1	112
Décembre	December	1-15	81	0	0	32	18	0	108
		16-31	72	0	1	10	15	0	124

Autres maladies déclarées: — Other diseases notified:

	Charbon Anthrax	*Fièvre récurrente Relapsing fever*	*Typhus exanthématique Typhus*	*Variole Smallpox*
1919 . . .	0	137	124	1759
1920 . . .	0	8	1	77
1921 . . .	2	2	34	27
1922 . . .	0	1	1	91
1923 . . .	0	3	11	12
1924 . . .	4	0	0	1
1925 . . .	0	0	1	2

a Pour le mois de décembre seulement. Déclaration obligatoire depuis le mois de décembre 1920. — For the month of December only. Compulsorily notifiable since December 1920.

2 cas de choléra asiatique en 1921 sur un navire anglais venant de Léningrad. — Two cases of Asiatic cholera in 1921 on board a English vessel coming from Leningrad.

GIBRALTAR

(Population : 17 324. E. 31 déc. 1924.)

Source : Annual Report on the Health of Gibraltar.
Rapports du Ministère britannique de Santé. — Reports from the British Ministry of Health.

Maladie — Disease		Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	1 Sept. 28 Sept.	29 Sept. 26 Oct.	27 Oct. 23 Nov.	24 Nov. 21 Déc.	22 Dé 28 Dé
Cas	*Cases*																	
Diarrhée et entérite, 0-2 ans	Diarrhoea and enter., 0-2 years	—	13	28	18	0	0	0	0	2	4	2	2	1	3	4	0	
Diphtérie	Diphtheria	30	21	19	35	5	2	1	4	3	1	4	4	0	2	5	3	
Dysenterie	Dysentery	4	5	4	10	0	0	0	0	0	1	4	0	2	1	2	0	
Erysipèle	Erysipelas	14	30	25	23	2	4	1	2	0	2	1	0	2	4	0	4	
Fièvre ondulante	Undulant fever	6	12	4	4	0	0	0	1	0	0	1	1	1	0	0	0	
Fièvre paratyphoïde	Paratyphoid fever	6	6	5	1	0	0	0	0	0	0	0	0	0	1	0	0	
Fièvre typhoïde	Typhoid fever	20	19	17	21	0	1	1	0	3	3	2	4	2	3	1	0	
Fièvre puerpérale	Puerperal fever	3	5	2	1	0	0	0	0	0	1	0	0	0	0	0	0	
Grippe	Influenza	720	545	955	905	75	161	298	232	79	17	7	5	12	17	2	0	
Méningite cérébro-spin.	Cerebro-spin. mening.	—	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ophtalmie des nouveaux-nés	Ophtalmia neonatorum	2	2	1	2	0	0	0	1	0	0	0	0	1	0	0	0	
Pneumonie	Pneumonia	126	110	99	128	12	33	22	9	12	15	4	1	6	3	3	7	
Poliomyélite	Poliomyelitis	—	—	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rougeole	Measles	305	31	147	28	0	5	12	2	1	1	3	2	0	0	2	0	
Rubéole	German measles	—	—	2	6	0	4	1	0	0	1	0	0	0	0	0	0	
Scarlatine	Scarlet fever	9	218	12	8	3	0	0	2	0	0	1	0	0	0	2	0	
Tuberculose pulmonaire	Pulmonary tubercul.	29	48	27	33	0	5	3	4	5	4	6	2	1	0	1	1	
Varicelle	Chickenpox	2	74	19	93	9	0	10	9	11	21	8	3	0	0	4	16	
Variole	Smallpox	3	—	6	3	0	0	1	0	2	0	0	0	0	0	0	0	
Maladies vénériennes	Venereal diseases	—	5	8	20	4	1	0	3	0	0	0	5	2	1	0	0	

GRÈCE — GREECE

(Population: 6 500 000. E. 1 janv. 1924.)

Sources : Rapport d'ensemble relatif a la campagne de vaccination exécutée en Grèce (Société des Nations, C. H. 149). Rapport du Ministère de l'Hygiène. — Reports from the Ministry of Health.

Maladie — Disease			Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Charbon	Anthrax	C.	—	—	2	0	0	0	0	0	0	0	1	0	1	0	0
		D.	—	—	2	0	0	0	0	0	0	0	0	0	1	0	1
Coqueluche	Whooping-cough	C.	—	—	101	0	14	22	6	10	0	0	11	33	5	0	0
		D.	—	—	2	0	2	0	0	0	0	0	0	0	0	0	0
Diphtérie	Diphtheria	C.	—	192	294	18	11	19	15	17	11	10	15	20	41	48	69
		D.	—	38	41	3	4	3	3	1	1	0	1	6	4	4	11
Dysenterie	Dysentery	C.	—	182	261	8	2	2	6	9	60	66	45	17	34	8	4
		D.	—	14	15	0	0	0	0	0	4	2	7	0	2	0	0
Encéphalite léthar.	Encephalitis leth.	C.	—	14	8	0	3	0	0	5	0	0	0	0	0	0	0
		D.	—	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Erysipèle	Erysipelas	C.	—	—	27	2	1	0	0	2	0	0	4	8	4	1	5
		D.	—	—	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre ondulante	Undulant fever	C.	—	—	3	0	0	0	0	0	0	0	0	3	0	0	0
		D.	—	—	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre récurrente	Relapsing fever	C.	—	91	1	0	0	0	0	0	0	0	0	0	0	0	1
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	—	715	1191	173	22	20	44	24	58	33	136	106	140	104	331
		D.	—	123	54	8	1	1	1	2	1	1	5	2	10	8	14
Grippe	Influenza	C.	—	—	8166	220	2428	859	2573	1653	86	83	61	15	95	52	41
		D.	—	—	8	5	0	2	0	1	0	0	0	0	0	0	0
Lèpre	Leprosy	C.	—	21	21	0	4	2	0	0	0	0	1	2	4	3	5
		D.	—	—	3	0	1	2	0	0	0	0	0	0	0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	—	155	153	20	19	10	21	14	11	5	6	9	11	11	16
		D.	—	25	69	10	7	3	17	11	3	4	0	3	2	4	5
Oreillons	Mumps	C.	—	—	—	—	—	—	—	—	—	—	3	3	2	14	62
Paludisme	Malaria	C.	—	—	4963	—	—	—	142	—	—	—	840	1354	1190	540	897
		D.	—	—	—	—	—	—	—	—	—	—	3	1	5	2	1
Peste	Plague	C.	—	69	28	0	0	0	0	0	2	3	6	4	3	8	2
		D.	—	16	1	0	0	0	0	0	0	0	0	0	1	0	0
Rougeole	Measles	C.	—	—	3692	120	184	559	365	836	207	56	58	56	163	499	589
		D.	—	—	91	3	0	1	7	39	6	4	1	0	0	11	19
Scarlatine	Scarlet fever	C.	—	594	424	42	7	26	37	32	15	17	21	52	41	60	74
		D.	—	127	33	4	0	3	2	10	1	2	1	3	1	2	4
Tétanos	Tetanus	C.	—	—	2	0	0	0	0	0	0	0	1	1	0	0	0
		D.	—	—	2	0	0	0	0	0	0	0	0	1	0	1	0
Typhus exanthém.	Typhus	C.	7607	266	102	13	7	4	7	2	3	3	18	10	16	7	12
		D.	—	26	6	2	0	0	3	0	0	0	0	0	0	1	0
Varicelle	Chickenpox	C.	—	—	36	0	0	9	1	7	0	0	5	6	8	0	0
		D.	—	—	0	0	0	0	0	0	0	0	0	0	0	0	0
Variole	Smallpox	C.	2116	250	23	0	4	1	0	2	1	2	1	0	0	6	6
		D.	—	50	4	0	0	1	1	0	0	0	0	0	0	2	0

HONGRIE — HUNGARY

(Population: 8 364 450. E. 31 décembre 1925.)

Source: Rapports sur les Maladies épidémiques.

Quinzaine se terminant le : Half-month ending:	Coqueluche Whooping-cough		Diphtérie Diphtheria		Dysenterie Dysentery		Fièvre typhoïde Enteric fever		Méningite céréb.-spin. Cereb.-spin. meningitis		Oreillons Mumps		Rougeole Measles		Scarlatine Scarlet fever		Septicémie puerpérale Puerperal Septicæmia		Typhus exanthém. Typhus	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D	C.	D.	C.	D.
Total 1921	2656	137	3781	337	5230	485	6880	612	35	16	1844	2	51172	1070	21664	2866	161	51	73	8
» 1922	2669	127	2656	293	2455	332	5477	665	49	11	1631	5	7465	388	13243	2038	123	50	17	3
» 1923	2736	227	2635	276	4321	694	4880	669	29	11	3915	7	16413	386	6386	687	145	59	385	45
» 1924	5718	283	2814	291	3699	521	6994	907	23	16	1409	2	24906	327	5727	340	149	73	229	20
» 1925	5273	232	3469	352	1754	245	6013	682	41	22	1089	3	34775	477	8743	376	160	68	35	2
Janv.-Jan. 15	421	7	188	14	43	4	449	29	2	2	14	0	2317	22	515	14	6	2	0	0
31	200	9	166	30	32	4	239	35	1	1	30	0	2379	42	293	18	5	3	2	0
Févr.-Febr. 15	243	9	141	16	25	4	161	22	4	1	82	0	1969	32	285	18	8	3	6	0
28	233	9	159	15	26	4	129	21	1	3	145	0	2543	25	301	12	6	3	3	1
Mars-March 15	129	14	139	13	19	4	99	21	1	0	51	0	2635	39	269	18	7	2	3	1
31	224	4	153	18	23	4	126	18	4	3	37	0	3234	48	303	16	5	4	3	0
Avril-April 15	115	6	125	11	23	2	78	11	1	0	74	0	2151	52	314	11	6	4	2	0
30	227	12	149	13	32	5	83	16	4	2	50	0	2568	42	303	19	7	3	0	0
Mai-May 15	150	8	119	13	25	6	84	11	1	1	50	0	3087	37	335	21	5	2	0	0
31	236	15	131	7	35	3	76	6	0	0	51	0	2303	29	395	26	5	3	0	0
Juin-June 15	315	8	102	0	42	7	79	5	1	0	43	0	1905	23	304	11	7	1	0	0
30	273	14	109	9	82	16	111	12	5	1	30	0	1406	18	293	10	7	3	0	0
Juill.-July 15	289	17	88	9	85	9	121	13	3	2	19	0	888	11	208	6	3	3	0	0
31	277	21	101	7	126	16	163	16	1	0	14	0	499	15	217	12	5	1	0	0
Août-Aug. 15	245	13	92	8	179	21	238	16	1	1	16	1	259	1	172	12	2	2	0	0
31	260	16	111	10	224	36	361	39	2	0	6	0	153	6	250	9	1	1	0	0
Sept.-Sept. 15	327	10	94	8	232	25	547	38	0	1	9	0	111	1	323	14	11	2	0	0
30	217	4	130	9	175	17	633	54	2	1	24	1	307	1	396	20	6	4	0	0
Oct.-Oct. 15	109	2	156	10	113	18	486	55	1	0	45	0	579	2	530	20	13	4	0	0
31	232	5	203	28	93	26	564	56	1	1	33	0	623	5	602	18	10	4	3	0
Nov.-Nov. 15	162	16	207	23	47	9	395	65	2	1	62	0	769	4	558	13	11	3	4	0
30	116	5	238	28	32	2	363	50	1	0	95	0	899	7	608	22	10	6	1	0
Déc.-Dec. 15	158	3	188	34	22	3	248	41	0	1	58	1	638	6	515	18	7	2	4	0
31	115	5	180	19	19	0	180	32	2	0	51	0	553	9	454	18	7	3	4	0

Autres maladies déclarées: — Other diseases notified:

	Charbon Anthrax		*Erysipèle Erysipelas*		*Poliomyélite aiguë Acute poliomyelitis*		*Variole Smallpox*	
	C.	D.	C.	D.	C.	D.	C.	D.
1921	0	0	2	0	14	1	131	25
1922	0	0	0	0	3	1	2	0
1923	1	1	0	0	2	1	9	4
1924	7	0	1	0	0	0	1	0
1925	0	0	0	0	0	0	2	0

Note. Les données fournies par le Ministère de la Prévoyance Sociale sont définitives. Les rapports concernant les décès publiés par le Service d'Hygiène ne correspondent pas toujours à ceux publiés par l'Office Central de Statistique, par le fait que les données de l'Office Central comprennent aussi les renseignements communiqués par des personnes étrangères au corps médical, alors que le Service de Santé n'enregistre que les décès de maladies à déclaration obligatoire signalés par les médecins. — The data are final as far as the Ministry of Social Welfare is concerned. It must be noted that the returns of deaths prepared by the Health Service do not correspond with those prepared by the Central Statistical Office, since in the latter are included deaths from contagious diseases reported by persons other than physicians, while the Health Service gives only cases reported on the forms for notifiable diseases in use by practising physicians.

IRLANDE DU NORD — NORTHERN IRELAND (Population: 1 280 000. E. 30 juin 1925.)

Sources: Rapports trimestriels, 1925; rapports annuels du Registrar-General. — Quarterly Returns, 1925; Annual Reports of the Registrar-General.

Maladie — Disease		Cas — Cases							Décès — Deaths					
		Total 1923	Total 1924	Total 1925	1925 Trimestre — Quarter I	II	III	IV	1920	1921	1922	1923	1924	192*
Coqueluche [1]	Whooping-cough[1]	—	—	—	—	—	—	—	185	366	194	305	276	311
Diarrhée et entérite [1]	Diarrhœal diseases[1]	—	—	—	—	—	—	—	359	453	354	407	380	—
Diphtérie	Diphtheria	925	741	1013	241	210	192	370	141	143	135	102	88	99
Dysenterie	Dysentery	0	1	0	0	0	0	0	2	2	3	3	0	0
Encéphalite léthargique [2]	Encephalitis lethargica [2]	23	278	23	7	7	5	4	26	19	5	34	80	10
Erysipèle	Erysipelas	190	124	172	51	37	28	56	—	—	18	23	16	—
Fièvre continue	Continued fever	2	1	4	2	2	0	0	—	—	—	—	—	—
Fièvre puerpér.[3]	Puerperal fever[3]	22	18	7	0	0	7	0	116	64	56	49	43	—
Fièvre typhoïde et paratyph.	Enteric fever	168	127	310	93	89	74	54	65	37	26	20	25	47
Grippe [1]	Influenza [1]	—	—	—	—	—	—	—	560	316	889	415	1026	587
Méningite cérébro-spin.[2]	Cerebro-spinal meningitis[2]	4	6	11	6	3	2	0	9	10	6	5	1	0
Ophtalmie des nouveau-nés [2]	Ophthalmia neonatorum [2]	11	6	7	2	2	1	2	—	—	—	—	—	—
Paludisme	Malaria	3	3	5	1	0	3	1	—	—	0	3	4	—
Pneumonie [4]	Pneumonia [4]	303	324	310	119	80	35	76	1508	1199	1402	1240	1387	—
Poliomyélite aiguë [2]	Acute poliomyelitis [2]	2	9	2	0	0	0	2	—	—	4	6	3	—
Rougeole [2]	Measles [2]	—	—	—	—	—	—	—	278	44	52	204	213	213
Scarlatine	Scarlet fever	1622	2898	3696	874	786	850	1186	206	51	46	50	90	112
Tuberculose, toutes formes [2]	Tuberculosis, all forms [2]	—	—	—	—	—	—	—	2529	2244	2107	2037	2055	2040
Typhus exanth.	Typhus	6	12	2	2	0	0	0	12	2	1	2	3	1
Varicelle [2]	Chickenpox [2]	30	170	148	35	32	33	48	—	—	—	—	—	—
Variole	Smallpox	0	1	0	0	0	0	0	1	0	0	0	0	0

[1] La déclaration des cas n'est pas obligatoire. — Notification of cases not compulsory.
[2] Déclaration obligatoire seulement dans certains districts. — Only notifiable in certain districts.
[3] Notification incomplète. — Notification incomplete.
[4] Comprend la pneumonie primaire aiguë et la pneumonie grippale aiguë. — Including acute primary pneumonia and acut influenzal pneumonia.
* Données provisoires. — Provisional figures.

ITALIE — ITALY

(Population: *a* 40 116 700. E. 31 déc. 1924.)

Cas de maladies à déclaration obligatoire signalés en 1919-1925; par semaine en 1925.
Cases of Notifiable Diseases reported in 1919-1925; by weeks in 1925.

Source: Bollettino delle Malattie infettive nel Regno, Roma. Bollettino Sanitario del Ministero dell' Interno.

Semaine se terminant le: Week ending:	Charbon Anthrax	Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalitis lethargica	Fièvres typhoïde et paratyph. Enteric fever	Méningite cérébro-sp. Cerebro-sp. meningitis	Poliomyélite aiguë Acute poliomyelitis	Rougeole Measles	Scarlatine Scarlet fever	Varicelle Chicken pox	Variole Smallpox
Total 1919	1498	11103	4973	—	23400	266	—	56401	6690	—	34365
» 1920	1712	12619	2666	—	32487	110	—	94223	10209	—	26453
» 1921	1295	12081	2201	278	35527	86	—	96725	11079	—	4644
» 1922	2029	11347	1197	477	25316	66	—	46471	11965	—	534
» 1923	2205	11183	1118	277	27626	368	—	75024	13418	—	495
a » 1924	2728	15041	1062	619	27108	409	250	91460	16000	—	430
a » 1925	1603	13845	982	526	23989	472	600	112475	15317	6087	204
Janvier — January 4	18	376	2	3	324	5	4	1206	346	81	1
11	26	347	2	11	251	4	3	1754	341	111	3
18	16	290	2	8	210	17	3	1910	307	108	2
25	21	345	4	8	230	8	8	1938	308	106	4
Février — February 1	13	309	0	11	165	9	5	1819	328	142	2
8	14	333	6	15	199	6	4	2295	320	94	2
15	16	358	3	20	182	8	5	2613	340	175	3
22	16	307	2	17	198	8	3	2675	294	158	5
Mars — March 1	14	308	2	20	157	5	7	2773	313	150	1
8	21	290	5	29	126	13	5	2704	350	196	4
15	17	392	7	30	207	11	12	3021	249	184	5
22	14	344	2	18	185	10	12	3084	295	154	2
29	16	314	0	15	141	16	6	2609	244	116	3
Avril — April 5	12	344	3	13	167	4	8	3554	345	143	3
12	10	222	31	21	145	6	6	2629	183	87	2
19	15	269	3	19	153	10	6	3701	376	171	1
26	9	244	5	19	132	14	6	3225	312	150	3
Mai — May 3	17	316	1	18	167	21	6	3424	234	132	17
10	11	247	0	21	183	7	9	3226	280	164	1
17	16	249	3	13	176	7	5	3143	281	153	7
24	21	229	13	14	149	15	6	3291	299	173	5
31	20	302	7	19	245	22	17	4044	371	279	5
Juin — June 7	21	148	3	10	177	10	19	2444	229	108	7
14	23	217	8	6	242	18	16	3240	269	205	3
21	26	136	15	7	194	13	16	1684	211	134	7
28	44	210	38	12	445	4	20	2743	290	205	8
Juillet — July 5	24	214	40	8	368	10	16	2227	270	108	9
12	32	173	43	5	454	2	15	1739	205	57	2
19	41	190	55	6	493	10	29	2073	233	108	16
26	43	182	53	6	678	6	42	2280	250	71	2
Août — August 2	55	165	69	11	596	12	14	3407	221	122	0
9	52	188	76	5	825	12	24	2227	203	121	2
16	51	179	48	7	726	5	26	1598	219	33	10
23	68	174	67	2	906	5	18	1394	255	50	6
30	66	183	59	7	924	5	23	760	186	35	2
Septembre-September 6	90	219	55	3	1032	14	17	1006	236	51	1
13	39	211	36	3	996	4	5	929	192	28	0
20	53	204	44	5	956	7	18	878	253	30	2
27	75	217	29	4	1001	7	9	800	297	22	1
Octobre — October 4	59	264	25	3	1090	9	29	1239	306	50	5
11	62	241	13	2	910	7	7	1048	308	46	5
18	24	240	14	2	664	9	21	793	340	54	0
25	46	290	11	4	738	6	10	1258	317	27	4
Novembre-November 1	16	229	14	3	705	4	16	960	254	55	3
8	55	309	27	4	911	14	10	1951	481	67	2
15	30	314	8	5	710	3	10	1820	386	72	7
22	17	306	12	6	762	6	5	1759	423	155	3
29	20	273	8	5	512	10	4	1571	325	130	2
Décembre-December 6	19	319	3	4	492	7	4	1595	320	169	0
13	24	321	3	3	430	7	3	1638	290	137	3
20	25	197	0	2	374	8	5	1292	263	115	1
27	22	326	1	7	306	3	2	1856	306	124	9
1926 Janvier-January 3	28	271	2	7	280	9	1	1628	263	171	1

Autres maladies déclarées: — Other diseases notified:

	Fièvre puerpérale Puerperal fever	Paludisme Malaria	Pellagre Pellagra	Peste Plague	Rage humaine Rabies	Typhus exanthém. Typhus
1919	727	247084	399	0	44	6051*
1920	1505	227747	256	0	39	113
1921	1652	267589	194	19	57	60
1922	1551	234656	303	22	82	0
1923	1820	188937	66	1	113	1
1924	2141	250911	68	3	150	3
1925	—	—	—	2	65	0

* Dont 5416 cas parmi les prisonniers de guerre. — Of these, 5416 cases were among prisoners of war.
a Y compris Trieste, Pola, le Trentin, Zara et Fiume. — Including Trieste, Pola, Trentino, Zara and Fiume.

LETTONIE — LATVIA

(Population: 1 844 805. R. 1925.)

Source: Conspectus Morborum Contagiosorum in Republica Latviensi.

Maladie — Disease		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*																	
Charbon	Anthrax	9	7	2	4	1	0	0	0	0	0	1	0	0	0	0	0	0
Coqueluche	Whooping-cough	449	510	479	495	919	68	109	122	91	137	146	70	45	33	13	51	34
Diphtérie	Diphtheria	964	698	645	594	665	85	67	69	50	48	56	37	40	54	67	38	54
Dysenterie	Dysentery	1162	913	114	276	150	5	2	3	0	10	6	28	64	19	11	1	1
Encéph. léthar.	Enceph. lethar.	6	4	0	3	1	0	0	0	0	0	1	0	0	0	0	0	0
Erysipèle	Erysipelas	21	23	23	47	48	8	6	9	3	5	5	0	6	0	0	0	6
Fièvre puerpér.	Puerperal fever	18	23	22	21	26	4	2	1	5	2	1	1	1	4	1	1	3
Fièvre récurr.	Relapsing fever	275	116	10	3	2	0	0	0	0	0	1	0	0	0	1	0	0
Fièvre paratyph.	Paratyph. fever	1431	1011	1043	24	10	0	0	1	1	0	0	3	2	2	0	1	0
Fièvre typhoïde	Typhoid fever				1546	997	98	62	78	64	55	71	87	136	138	96	67	45
Grippe	Influenza	14	226	234	97	38	7	6	14	11	0	0	0	0	0	0	0	0
Lèpre	Leprosy	28	24	37	16	13	1	1	0	0	1	1	1	2	2	3	0	1
Méningite céré-bro-spinale	Cerebro-spinal meningitis	31	22	19	20	34	0	0	2	4	12	2	1	0	1	1	4	7
Oreillons	Mumps	315	311	817	629	907	95	243	204	163	53	35	13	10	8	11	37	35
Paludisme	Malaria	192	66	50	15	0	0	0	0	0	0	0	0	0	0	0	0	0
Rage humaine	Rabies	20	15	21	14	16	0	2	3	1	3	0	1	0	3	0	2	1
Rougeole	Measles	3062	715	315	1592	3560	252	338	435	466	743	445	226	68	102	110	117	258
Scarlatine	Scarlet fever	1532	1598	1555	1450	2767	313	329	262	296	201	199	151	110	145	184	241	336
Tétanos	Tetanus	3	2	0	2	1	0	0	0	0	0	1	0	0	0	0	0	0
Typhus exanth.	Typhus	1288	1480	430	290	96	33	11	4	12	5	9	6	3	1	2	0	10
Varicelle	Chickenpox	32	70	55	23	9	1	3	1	2	0	0	0	0	2	0	0	—
Variole	Smallpox	255	160	23	25	17	5	1	3	0	3	1	1	0	0	0	0	3

Autres maladies déclarées: 1 cas de choléra asiatique en 1921 ; 2 cas de scorbut en 1922, et 1 cas de rubéole en 1924. — Other diseases notified: 1 case of Asiatic cholera in 1921 ; 2 cases of scurvy in 1922, and 1 case of German measles in 1924.

LUXEMBOURG — LUXEMBURG

(Population: 267 767. E. 31 déc. 1922.)

Source: Rapport du Département de la Santé Publique. — Report from the Public Health Department.

Maladie — Disease		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Cas	*Cases*																	
Charbon	Anthrax	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coqueluche	Whooping-cough	9	22	18	15	17	0	3	2	1	3	1	1	2	0	1	3	0
Diphtérie	Diphtheria	201	75	58	52	76	3	14	5	10	3	8	3	2	4	12	1	11
Dysenterie	Dysentery	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Encéphalite léthargique	Encephalitis lethargica	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
Fièvre puerpér.	Puerperal fever	17	13	9	10	3	0	0	0	0	0	0	0	0	2	1	0	0
Fièvre typhoïde	Enteric fever	157	96	44	79	48	2	0	3	3	5	3	3	18	0	2	5	4
Méningite cérébro-spinale	Cerebro-spinal meningitis	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	157	29	23	52	51	2	4	1	5	9	3	2	2	7	6	6	4
Tuberculose (Décès)	Tuberculosis (Deaths)	—	—	—	—	33	0	0	0	3	3	3	6	0	0	5	6	7

LITHUANIE — LITHUANIA

(Population: 2 062 038**. E. 31 déc. 1924.)

Sources: Rapports du Département de la Santé publique. — Reports from the Public Health Department.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Charbon	Anthrax	C.	—	3	14	2	5	0	0	0	0	0	1	2	1	0	0	1	0
		D.	—	0	3	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Coqueluche	Whooping-cough	C.	—	—	1131	573	398	18	39	16	16	5	19	41	52	35	44	64	49
		D.	—	—	11	18	3	0	0	0	0	0	0	0	0	1	1	1	0
Diphtérie	Diphtheria	C.	—	292	228	223	179	15	13	16	11	16	12	10	13	22	16	23	12
		D.	—	15	12	4	11	1	0	2	0	1	0	0	2	0	1	2	2
Dysenterie	Dysentery	C.	1163	356	184	180	109	0	4	1	1	6	7	23	53	12	2	0	0
		D.	123	12	15	30	14	0	0	0	0	0	2	0	10	2	0	0	0
Encéphalite léthargique	Encephalitis lethargica	C.	—	—	72	8	5	3	0	1	0	0	0	0	0	0	1	0	0
		D.	—	—	8	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Erysipèle	Erysipelas	C.	—	—	345	274	236	19	12	18	10	22	19	16	36	26	18	15	25
		D.	—	—	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre puerpérale	Puerperal fever	C.	—	—	180	157	141	18	15	14	10	9	12	8	14	8	8	6	19
		D.	—	—	11	8	7	1	0	0	1	1	0	1	1	0	0	1	1
Fièvre récurrente	Relapsing fever	C.	1031	910	13	11	9	0	0	0	0	6	3	0	0	0	0	0	0
		D.	19	24	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre typhoïde	Enteric fever	C.	1277	1140	799	758	615	38	36	63	30	41	44	41	70	80	82	44	46
		D.	52	33	34	35	25	1	0	3	0	1	3	4	4	2	3	3	1
Gale	Scabies	C.	—	—	1803	1406	822	79	66	103	71	57	69	40	56	70	59	60	92
Grippe	Influenza	C.	—	—	3504	2854	2780	402	276	272	263	247	152	160	191	213	164	167	273
		D.	—	—	2	1	10	3	0	1	2	0	0	0	0	0	1	2	1
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	—	20	13	15	14	0	0	3	1	3	3	1	2	0	0	1	0
		D.	—	5	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Oreillons	Mumps	C.	—	—	88	88	126	9	12	20	7	5	1	3	2	2	38	13	14
Paludisme	Malaria	C.	—	—	105	65	34	2	3	0	3	0	10	4	4	3	0	1	4
Rougeole	Measles	C.	—	—	374	2389	1644	405	299	218	208	121	163	57	36	34	53	45	5
		D.	—	—	7	63	29	3	7	3	7	2	0	2	3	1	0	1	0
Scarlatine	Scarlet fever	C.	—	437	230	399	1505	118	120	135	137	74	81	73	101	149	154	180	183
		D.	—	26	11	25	97	5	4	4	6	4	6	5	12	7	11	16	17
Trachome	Trachoma	C.	—	—	1764	2375	2118	196	142	233	191	114	226	42	148	182	195	158	291
Tuberculose	Tuberculosis	C.	—	—	3653	3396	2649	300	208	278	275	253	262	147	250	151	149	158	218
		D.	—	—	70	126	95	12	11	7	7	8	5	3	9	8	5	6	14
Typhus exanth.	Typhus	C.	3004	3409	830	618	221	27	27	43	48	40	4	1	5	8	1	6	11
		D.	167	226	60	51	12	2	0	1	4	2	1	0	0	1	0	0	1
Varicelle	Chicken pox	C.	—	—	36	46	178	34	19	8	7	20	0	1	0	4	2	46	37
Variole	Smallpox	C.	1035	345	25	58	12	2	0	1	4	1	0	0	3	0	1	0	0
		D.	121	30	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0
Chancre mou	Soft chancre	C.	—	—	99	80	37	0	2	5	3	2	0	0	2	1	20	1	1
Gonorrhée	Gonorrhœa	C.	—	—	577	718	785	52	35	54	46	81	52	46	72	91	96	93	67
Syphilis	Syphilis	C.	—	—	580	733	677	51	51	71	45	67	50	22	61	54	63	80	62

Autres maladies déclarées: — Other diseases notified:

			1921	1922	1923	1924	1925
Botulisme.	Botulism	C.	0	0	2	0	1
Choléra asiatique.	Asiatic cholera	C.	35	0	0	0	0
		D.	11	0	0	0	0
Lèpre.	Leprosy	C.	0	0	1	0	1
Rage.	Rabies	D.	0	0	0	0	1

** Territoire de Klaipéda non compris. — Klaipeda Territory not included.

MALTE — MALTA

(Population : 223 088. E. 31 déc. 1924.)

Sources: Rapport annuel du Bureau de Santé publique. — Annual Report from Public Health Office.
Rapports du Ministère britannique de Santé. — Reports from the British Ministry of Health.

Maladie — Disease			Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Febr.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Coqueluche	Whooping-cough	C.	1	1171	501	22	7	3	2	0	0	1	7	1	1	0	0	0
		D.	0	33	53	0	0	0	0	0	0	0	0	0	0	0	0	0
Diphtérie	Diphtheria	C.	27	15	39	64	7	5	7	6	4	0	1	0	5	14	11	4
		D.	11	2	10	11	2	2	2	0	1	0	0	0	1	2	1	0
Encéphalite léthargique	Encephalitis lethargica	C.	2	0	40	27	7	5	4	1	3	2	0	2	1	0	0	2
		D.	1	0	11	8	1	1	2	0	0	2	1	0	0	0	0	1
Erysipèle	Erysipelas	C.	64	57	61	63	4	4	8	2	7	5	8	4	5	3	3	10
		D.	4	1	5	6	0	1	1	0	0	1	1	0	0	1	0	1
Fièvre ondulante	Undulant Fever	C.	1102	1060	940	662	36	21	25	39	62	87	95	90	69	54	52	32
		D.	59	41	49	42	0	2	0	3	0	7	7	9	7	3	3	1
Fièvre puerpérale	Puerperal Fever	C.	33	23	33	24	2	0	2	6	2	1	2	0	4	0	4	1
		D.	9	8	13	8	1	0	1	3	0	0	0	0	1	0	2	0
Fièvres typhoïde et paratyphoïde	Enteric Fever	C.	438	273	307	278	8	5	2	3	7	11	24	27	66	55	51	19
		D.	51	26	41	27	1	1	1	0	1	0	0	6	5	4	6	2
Grippe	Influenza	C.	2212	159	798	583	5	36	423	105	5	4	0	0	0	2	2	1
		D.	46	5	22	17	0	2	7	7	1	0	0	0	0	0	0	0
Paludisme*	Malaria*	C.	12	5	8	7	3	1	1	0	1	1	0	0	0	0	0	0
Pneumonie et broncho-pneumonie	Pneumonia and broncho-pneumonia	C.	223	89	124	170	16	28	37	19	7	13	8	12	8	9	4	9
		D.	78	51	81	60	5	4	13	9	6	2	1	9	0	1	5	5
Poliomyélite aiguë	Acute poliomyelitis	C.	0	2	0	7	0	0	2	0	0	1	0	0	2	1	1	0
Rougeole	Measles	C.	1	0	567	144	22	0	1	3	1	8	11	12	1	64	7	14
		D.	0	0	17	3	0	0	0	0	0	1	0	0	0	2	0	0
Scarlatine	Scarlet fever	C.	143	38	6	29	0	0	0	2	7	4	4	6	1	4	0	1
		D.	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuberculose pulmonaire	Pulmonary tuberculosis	C.	222	207	222	271	24	35	18	20	26	22	38	12	25	21	16	14
		D.	181	180	181	139	18	9	14	14	18	9	11	11	13	0	14	8
Trachome	Trachoma	C.	833	1282	488	542	31	36	22	23	22	26	35	18	70	166	42	51
Varicelle	Chickenpox	C.	38	54	30	134	1	2	10	13	15	38	18	9	4	4	10	10
Variole	Smallpox	C.	1	0	0	84	0	0	0	6	1	9	5	4	0	38	14	7
		D.	0	0	0	16	0	0	0	2	1	1	0	1	0	8	1	2

* Un décès en 1922. — One death in 1922.

PAYS-BAS — NETHERLANDS

(Population: 7 358 365. E. 1er juill. 1925.)

Source: Verslagen en Mededeelingen betreffende de Volksgezondheid.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925 **	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc Dec.
Diphterie	Diphtheria	C.	7575	4744	4134	4451	4719	480	470	470	434	407	377	332	250	335	358	425	381
		D.	428	318	231	237	257	28	42	27	22	23	13	17	10	9	18	18	30
Dysenterie	Dysentery	C.	20	14	7	40	180	1	1	0	2	1	1	9	34	102	18	5	6
		D.	9	11	4	5	17	0	0	0	1	0	0	0	6	8	0	2	0
Encéphalite léthargique *	Encephalitis lethargica*	C.	—	—	—	35		11	10	35	22	9	6	5	6	7	2	6	1
		D.	—	—	41*a*	14		3	9	12	5	4	6	4	3	2	2	8	1
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	2004	1134	1391	1187	1159	75	57	67	40	46	127	129	176	172	127	65	78
		D.	281	135	175	161	137	9	7	12	6	4	11	19	17	18	21	5	8
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	120	132	111	106	115	10	6	17	12	12	7	9	3	9	9	7	14
		D.	61	69	67	56	67	0	7	3	7	15	4	10	3	2	5	5	6
Poliomyélite *	Poliomyelitis *	C.	—	—	6*a*	38	32	4	0	4	1	2	1	2	5	6	5	2	0
		D.	—	—	0	19	9	1	1	1	0	1	0	0	1	1	1	0	2
Scarlatine	Scarlet fever	C.	4045	3305	3577	6635	11628	827	740	802	694	670	709	878	935	1279	1529	1324	1241
		D.	60	34	28	54	115	8	9	9	6	0	8	10	9	9	10	19	12
Typhus exanth.	Typhus	C.	8	1	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0
		D.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Variole	Smallpox	C.	1	0	2	3	2	0	1	1	0	0	0	0	0	0	0	0	0
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* A déclaration obligatoire depuis le 21 septembre 1923. — Notification compulsory since September 21st, 1923.
a Données pour la période du 21 sept. au 31 décembre 1923. — Data given for period from Sept. 21st to Dec. 31st, 1923.
** Données provisoires. — Provisional data.

NORVÈGE (villes) — NORWAY (Towns)

(Population: 798 260. E. 31 déc. 1924.)

Source : Rapport spécial pour les années 1921-1924. Special Report for the years 1921-1924. Maanedlig Oversigt over Sundhetstilstanden i Byerne, 1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923 **	Total 1924 **	Total 1925 **	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Angine	Tonsilitis	C.	10559	11489	11205	9273	12132	1103	1195	1101	918	1016	825	518	684	945	1320	1322	1185
		D.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bronchite aiguë	Ac. bronchitis	C.	68990	67685	49289	53666	53145	6640	5905	5397	4618	4230	3535	2256	2363	3413	4426	4952	5410
		D.	345	437	140	109	113	12	15	18	8	13	11	8	4	1	7	4	12
Diarrhée aiguë et choléra nostras	Acute diarrhœa and cholera nostras	C.	13171	11089	7137	12197	11949	790	712	629	616	736	867	1515	2309	1539	911	718	607
		D.	113	107	44	70	68	9	4	3	2	6	8	7	8	7	4	4	6
Coqueluche	Whooping-cough	C.	2624	6607	4580	2487	4468	370	426	378	431	516	509	285	277	336	303	332	305
		D.	51	94	38	14	23	2	3	3	5	4	3	2	0	0	0	0	1
Diphtérie	Diphtheria	C.	2000	877	826	644	533	69	41	28	33	30	34	39	57	31	50	75	46
		D.	78	33	32	15	22	4	1	2	0	0	4	3	3	1	1	2	1
Dysenterie	Dysentery	C.	166	106	24	36	327	12	4	4	0	4	2	42	194	36	5	6	18
		D.	2	1	0	0	5	2	0	0	0	0	0	0	1	0	2	0	
Encéphalite léth.	Encephalitis l.	C.	55	7	10	10	14	2	4	3	0	1	0	1	1	2	0	0	0
		D.	13	0	1	2	3	0	1	1	0	0	0	1	0	0	0	0	0
Erysipèle	Erysipelas	C.	830	800	815	682	812	69	44	46	75	74	48	43	50	64	118	90	91
		D.	25	11	20	13	19	2	0	3	4	3	1	0	2	0	0	1	3
Fièvre puerpérale	Puerperal fever	C.	47	30	34	34	34	2	5	5	2	4	1	0	0	5	4	2	4
		D.	7	13	11	9	5	0	1	0	0	1	1	0	0	1	0	0	1
Fièvre typhoïde	Typhoid fever	C.	607	223	170	161	407	15	7	36	11	34	165	26	32	42	22	10	7
		D.	27	19	13	7	12	0	3	1	1	1	2	0	2	0	0	1	1
Grippe	Influenza	C.	7131	59472	23784	10435	8550	1556	1621	1167	773	633	283	154	272	313	466	585	727
		D.	13	212	131	53	11	1	4	1	2	0	1	1	0	0	0	0	1
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	16	7	12	8	12	0	0	2	4	1	1	1	1	1	0	0	1
		D.	7	4	7	5	5	0	0	1	1	1	1	0	0	1	0	0	0
Oreillons	Mumps	C	3738	783	531	950	461	115	96	73	48	28	19	9	12	13	14	8	26
		D.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paludisme	Malaria	C.	10	14	12	5	11	0	1	1	0	1	1	0	1	2	2	1	1
		D.	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Pemphigus des nouveau-nés	Pemphigus of new-born	C.	68	32	45	23	21	3	2	1	0	1	1	1	1	4	4	3	0
		D.	3	4	1	0	2	1	0	0	1	0	0	0	0	0	0	0	0
Pleurésie	Pleurisy	C.	2115	2195	1828	1960	1907	190	199	194	190	187	142	124	116	137	134	139	155
		D.	25	34	12	10	14	1	0	0	3	1	0	3	1	1	1	2	1
Pneumonie croupale	Croupous pneumonia	C.	2523	3031	2311	2432	1949	214	208	225	216	255	138	73	55	81	139	138	207
		D.	334	401	348	313	264	30	26	26	30	15	21	11	9	15	19	30	32
Poliomyélite aiguë	Acute poliomyelitis	C.	4	6	19	13	87	0	0	2	0	0	15	16	26	19	7	2	0
		D.	1	1	1	1	8	0	0	0	0	0	0	0	5	2	1	0	0
Rhumatisme articulaire	Rheumatic fever	C.	1057	1283	1281	1036	1070	98	91	97	104	112	72	47	61	83	88	110	107
		D	11	13	13	10	5	0	0	0	0	1	0	1	0	1	1	1	0
Rougeole	Measles	C.	6641	3957	2150	6212	3724	581	774	708	505	362	208	122	29	26	131	164	114
		D.	33	31	10	28	18	2	1	8	3	2	2	0	0	0	0	0	0
Rubeole*	Rubeola*	C.	241	174	553	1067	273	22	25	18	26	10	19	8	11	18	16	55	45
Scarlatine	Scarlet fever	C.	469	908	1108	643	556	63	44	49	60	45	33	16	28	42	67	63	46
		D	1	8	4	1	2	0	0	0	0	0	0	0	0	0	0	1	1
Scorbut*	Scurvy*	C.	1	4	2	1	2	0	0	0	0	1	0	0	0	0	1	0	0
Septicémie, pyémie	Septicæmia, pyæmia	C	135	121	83	79	110	9	8	7	11	4	8	4	6	18	16	8	11
		D.	72	66	36	41	57	5	3	6	5	2	2	5	3	7	8	4	7
Typhus exanth.	Typhus	C.	—	3	0	0	3	0	0	0	0	0	0	1	0	0	0	1	1
		D.	—	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Varicelle	Chickenpox	C.	2356	1730	1409	1632	2191	171	187	189	199	203	155	83	76	87	181	341	319
Variole	Smallpox	C.	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Chancre mou*	Soft chancre*	C.	487	427	278	230	194	18	15	16	12	25	15	22	12	16	14	17	12
Gonorrhée*	Gonorrhœa*	C.	4245	3979	3655	3636	3590	257	305	263	247	243	338	296	339	350	369	355	228
Syphilis	Syphilis	C.	1285	1138	906	837	803	69	88	81	68	54	59	43	65	75	79	82	40
		D.	8	28	13	5	9	1	2	2	0	0	1	2	0	1	0	0	0

* Pas de décès, 1921-1925. — No deaths, 1921-1925.
** Données provisoires. — Provisional data.

POLOGNE — POLAND

(Population: 27 184 836. R. 30 sept. 1921.)

Source: Rapport spécial de la Direction générale de la Santé publique. — Special Report from General Public Health Office.

Semaine se terminant le: Week ending:	Coqueluche Whooping-cough C.	Coqueluche Whooping-cough D.	Diphtérie Diphtheria C.	Diphtérie Diphtheria D.	Dysenterie Dysentery C.	Dysenterie Dysentery D.	Encephalite lethargique Encephalitis lethar. C.	Encephalite lethargique Encephalitis lethar. D.	Erysipèle Erysipelas C.	Erysipèle Erysipelas D.	Fièvre récurrente Relapsing fever C.	Fièvre récurrente Relapsing fever D.	Fièvres typhoïde et paratyph. enteric fev. C.	Fièvres typhoïde et paratyph. enteric fev. D.	Méningite Meningitis C.	Méningite Meningitis D.	Paludisme Malaria C.	Paludisme Malaria D.	Rage humaine Rabies D.	Rougeole Measles C.	Rougeole Measles D.	Scarlatine Scarlet fev. C.	Scarlatine Scarlet fev. D.	Septicémie puerpérale Puerperal septicæmia C.	Septicémie puerpérale Puerperal septicæmia D.	Trachome Trachoma C.	Typhus exanthém. Typhus C.	Typhus exanthém. Typhus D.	Variole Smallpox C.	Variole Smallpox D.
Total 1919	1126	167	1815	219	7734	1226	—	—	425	76	3266	149	11421	1046	330	101	1513	13	1	6933	464	4690	547	341	111	1570	219088	18641	1864	264
« 1920	3674	300	3178	387	31020	5168	—	—	835	115	7188	293	21466	1972	596	226	2073	25	19	10831	405	16664	2256	508	196	1556	168097	22575	3948	687
« 1921	4356	301	4130	544	32944	4988	85	43	1331	118	13850	414	30067	2384	477	281	52965	41	22	23143	782	28164	3924	539	222	2425	49547	4199	5078	823
« 1922	8219	446	4228	414	14344	1739	121	27	1644	107	41207	1461	22056	1641	533	269	17611	13	34	23830	792	14717	1945	609	233	2737	42724	3199	2399	519
« 1923	4367	462	3694	426	5314	853	329	59	1483	77	2067	44	14037	1284	597	332	4770	4	36	22159	689	15746	1711	682	252	4061	11185	898	502	83
« 1924	4681	434	4838	494	10492	1533	89	34	1551	93	366	12	16288	1322	414	256	1881	1	43	10154	166	18030	1570	864	264	2954	7706	666	861	126
« 1925	10435	687	5888	567	3285	357	157	24	2126	82	104	3	14025	1099	*396	*181	1777	4	30	50928	1112	25210	2403	783	286	4751	4196	338	77	3
Janv.—Jan. 10	157	11	154	21	30	1	14	0	55	2	3	0	385	28	6	2	21	0	0	414	15	698	71	23	3	66	141	8	0	0
17	175	14	143	10	33	1	6	1	53	0	7	0	344	21	8	5	15	0	0	528	14	437	37	17	9	55	103	10	4	1
24	226	18	101	8	9	0	11	1	43	3	5	0	301	29	6	2	18	0	0	476	9	555	67	10	8	79	157	16	6	0
31	191	7	111	14	34	4	11	0	38	1	11	0	283	21	11	2	19	0	0	763	4	529	58	12	2	38	144	7	0	0
Fév. — Feb. 7	153	14	141	18	17	1	7	1	29	2	1	0	262	23	5	2	27	0	0	590	8	526	41	17	5	75	118	13	3	0
14	148	10	101	10	23	6	6	1	45	1	0	0	268	34	8	6	11	0	2	876	20	518	42	15	9	76	115	7	2	0
21	128	20	125	10	14	2	8	1	39	0	5	0	250	28	8	8	25	0	1	593	16	520	41	13	5	100	131	12	0	0
28	102	5	114	15	10	2	4	0	29	1	4	0	227	23	8	5	31	0	1	712	19	477	49	16	7	91	148	15	2	0
Mars—March 7	104	9	119	12	18	1	4	0	26	1	3	1	253	28	10	3	37	0	0	923	16	528	61	26	4	119	201	9	3	1
14	181	11	129	13	16	3	8	1	29	0	5	0	241	21	6	4	35	0	0	930	18	473	79	17	5	51	203	16	0	0
21	119	13	98	13	15	0	8	0	22	0	4	0	230	19	8	5	33	0	1	989	21	456	43	21	9	57	188	11	7	0
28	176	10	141	16	12	1	2	1	43	5	1	0	216	18	7	4	35	0	0	897	10	407	37	19	7	139	170	11	4	0
Avril—April 4	169	13	117	15	9	0	7	1	40	3	2	0	184	15	4	3	30	0	0	727	16	366	42	14	3	66	270	18	5	0
11	75	16	90	8	13	1	6	1	17	4	2	0	167	25	14	7	39	0	0	664	20	357	36	13	5	28	164	11	0	0
18	88	6	102	8	12	3	1	3	32	1	1	0	175	14	14	5	52	0	0	735	13	355	22	18	5	49	144	23	1	0
25	165	11	96	12	12	0	2	0	30	4	1	0	191	25	19	8	40	1	0	902	27	407	42	15	7	129	181	20	1	0
Mai—May 2	162	13	108	12	20	4	7	0	34	3	1	0	196	18	19	7	85	0	0	885	25	351	31	13	7	77	137	16	2	0
9	197	18	98	15	26	3	3	0	35	3	1	0	200	14	14	2	85	0	0	849	18	408	34	12	6	78	160	10	2	0
16	127	7	102	16	14	0	1	2	25	2	2	0	200	12	10	1	75	0	1	1044	28	441	37	16	5	102	169	9	5	0
23	158	8	91	7	27	3	1	0	30	0	1	0	192	14	15	2	65	0	0	1169	28	429	44	17	10	103	93	8	2	1
30	335	10	102	9	29	1	3	2	27	2	1	0	170	13	10	4	94	0	3	1195	14	387	48	20	5	47	82	13	1	0
Juin—June 6	277	13	87	10	28	0	1	0	33	0	0	0	180	11	12	4	52	0	1	1126	25	408	50	9	5	74	62	1	0	0
13	311	12	100	8	54	7	1	0	52	1	1	0	170	18	5	3	94	0	0	875	25	412	51	15	6	56	49	3	6	0
20	335	24	121	14	65	6	2	1	37	1	1	0	186	15	9	3	76	1	2	949	35	463	37	14	2	138	39	5	0	0
27	304	31	103	10	72	7	1	0	43	4	1	0	229	7	8	3	59	0	0	882	24	516	28	13	2	54	32	3	4	0
Juillet—July 4	313	26	82	10	76	9	2	1	43	1	0	0	238	22	5	5	62	0	3	815	33	446	50	5	6	122	31	2	2	0
11	277	11	72	7	118	6	3	0	32	0	2	0	206	23	4	3	49	0	1	737	22	408	32	10	3	48	51	4	2	0
18	200	10	88	6	111	6	3	1	53	2	1	0	199	21	8	4	43	0	0	843	29	399	48	9	4	56	41	4	0	0
25	270	20	91	4	118	9	1	1	24	0	4	0	246	22	13	5	44	0	0	731	21	394	36	9	4	60	23	0	0	0
Août—August 1	232	11	79	5	188	20	4	0	41	1	0	0	287	32	7	3	67	0	2	467	21	384	53	14	6	94	35	1	0	0
8	185	10	70	5	255	29	2	1	44	2	1	0	224	15	6	2	26	0	1	405	15	382	47	16	4	46	15	1	1	0
15	214	14	73	6	240	25	1	0	30	2	3	0	235	13	3	4	15	0	5	314	9	316	36	7	5	42	13	2	2	0
22	223	18	93	9	268	29	1	0	28	3	0	0	350	20	4	0	33	1	0	264	7	387	37	18	4	57	13	1	0	0
29	247	10	108	4	284	28	1	0	45	1	0	0	389	21	4	1	22	0	0	358	12	498	47	19	7	75	23	0	0	0
Sept.—Sept. 5	217	14	112	7	239	44	2	1	47	0	7	0	440	28	7	3	25	1	0	280	11	441	48	5	4	55	13	1	0	0
12	351	25	108	4	207	33	2	0	44	1	0	0	458	18	5	4	15	0	0	347	13	499	47	8	1	88	15	0	0	0
19	369	12	123	6	123	18	0	0	35	2	3	0	551	40	6	1	22	0	1	449	12	577	56	16	4	111	11	0	0	0
26	141	11	133	15	73	7	0	0	69	3	0	0	502	32	6	4	40	0	1	972	15	657	68	12	4	162	13	1	0	0
Oct.—Oct. 3	385	21	139	5	71	6	1	0	59	3	2	0	451	28	4	8	18	0	0	1150	22	566	47	25	8	68	14	1	0	0
10	231	16	127	16	68	10	0	0	45	3	3	0	363	29	6	5	12	0	0	1304	27	576	37	20	3	198	29	1	1	0
17	284	11	128	12	34	5	1	0	58	2	0	0	373	15	6	3	23	0	0	1272	28	697	54	23	6	136	17	3	0	0
24	275	17	134	13	52	6	0	0	66	4	1	0	320	17	2	1	13	0	0	2107	37	684	63	17	10	260	15	2	0	0
31	121	15	144	12	18	2	1	0	54	0	0	0	369	22	3	0	7	0	2	1811	28	701	57	20	10	91	21	0	0	0
Nov.—Nov. 7	152	12	173	18	37	0	1	0	52	2	0	0	324	31	7	2	15	0	0	1740	63	611	54	9	1	99	31	6	8	0
14	169	10	123	7	29	6	2	0	52	1	2	0	277	24	7	2	1	0	1	2306	45	641	50	12	7	160	51	5	0	0
21	189	9	162	12	14	1	0	0	58	2	3	1	273	18	7	5	23	0	0	2056	25	679	42	14	7	156	37	3	0	0
28	172	10	130	13	8	0	3	0	45	1	3	0	256	24	7	2	6	0	0	2163	34	590	57	16	6	114	36	7	1	0
Déc.—Dec. 5	256	11	128	21	6	0	0	0	56	1	2	1	249	18	3	1	23	0	0	1825	41	559	44	14	6	220	37	2	0	0
12	147	18	149	15	14	0	0	0	47	0	1	0	228	16	5	5	1	0	0	1840	20	505	39	21	7	119	51	5	0	0
19	144	10	119	12	14	0	1	1	50	1	1	0	246	23	4	3	8	0	0	2359	22	444	48	23	7	77	56	5	0	0
26	56	9	106	12	5	0	0	1	29	0	0	0	158	15	6	2	7	0	0	718	17	403	86	8	1	43	46	3	0	0
31	52	11	100	7	3	0	0	0	34	0	1	0	113	18	7	3	4	0	0	602	15	342	42	18	10	57	57	3	0	0

Autres maladies déclarées: — Other diseases reported:

Année Year	Charbon Anthrax C.	Charbon Anthrax D.	Botulisme Botulism C.	Botulisme Botulism D.	Choléra asiatique Asiatic cholera C.	Choléra asiatique Asiatic cholera D.	Morve Glanders C.	Morve Glanders D.	Trichinose Trichinosis C.	Trichinose Trichinosis D.
1919	6	1	29	1	3	3	4	1	63	3
1920	37	10	37	12	57	31	6	4	38	0
1921	66	10	148	6	12	4	4	2	55	0
1922	56	10	157	35	125	34	22	4	35	9
1923	58	11	65	12	0	0	8	5	66	2
1924	69	17	114	32	0	0	1	1	48	2
1925	75	11	104	28	0	0	3	3	92	4

ROUMANIE — ROUMANIA

(Population: 17 216 000. E. 1 janv. 1925.)

Source: Analele (Buletin Oficial, Ministerului Sahatati Si Ocrotirilor Sociale).

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	Janv. Jan.	Févr. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Coqueluche	Whooping-cough	C.	6527	9615	18872	14406	17599	1094	727	941	859	1286	2245	2778	2164	2029	1293	1395	788
		D.	406	660	1416	975	1132	35	42	79	104	62	88	114	221	163	75	91	58
Diphtérie	Diphtheria	C.	3050	1519	1445	1289	1460	169	157	116	87	97	70	67	80	108	166	175	168
		D.	312	220	159	186	235	26	26	26	16	18	4	9	10	17	19	34	30
Dysenterie	Dysentery	C.	2958	996	1391	1420	979	14	7	9	14	20	52	256	310	178	65	43	11
		D.	520	175	235	192	125	0	0	0	0	1	5	39	37	26	6	8	3
Encéphalite léthar.	Encephalitis lethar.	C.	—	—	—	—	37	0	0	20	2	4	1	2	4	3	1	0	0
		D.	—	—	—	—	18	0	0	6	3	1	1	1	4	2	0	0	0
Fièvre récurrente	Relapsing fever	C.	484	444	152	49	34	8	3	4	1	7	5	6	0	0	0	0	0
		D.	84	8	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre typhoïde	Enteric fever	C.	6777	5954	5277	8276	7437	1072	367	258	164	158	223	407	991	1338	1203	777	479
		D.	833	627	561	909	792	79	43	43	19	16	18	34	81	122	119	128	90
Scarlatine	Scarlet fever	C.	43670	29027	23706	19029	12562	2851	1145	995	548	656	542	473	664	1017	1381	1370	920
		D.	5910	4075	3048	1700	878	108	98	94	62	60	45	35	55	58	110	89	64
Typhus exanthém.	Typhus	C.	8189	3902	5173	3312	1892	287	375	369	153	232	130	74	34	31	43	39	125
		D.	877	392	515	372	208	16	38	37	27	34	15	9	7	2	4	5	14
Variole	Smallpox	C	2744	865	89	9	28	13	8	2	0	0	1	0	1	0	2	1	0
		D.	560	153	11	1	2	0	0	1	0	0	0	0	0	0	0	1	0

ROYAUME DES SERBES, CROATES ET SLOVÈNES — KINGDOM OF THE SERBS, CROATS AND SLOVENES

(Population : 12 017 323. R. 31 janv. 1921.)

Sources: Rapports sanitaires hebdomadaires. — Bulletins mensuels du Ministère de la Santé publique, Belgrade.
Weekly Returns and Monthly Reports from the Ministry of Public Health, Belgrade.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Charbon	Anthrax	C.	350	617	—	—	501	24	19	14	21	30	38	44	79	89	67	33	3
		D.	45	89	—	—	69	5	4	1	4	1	5	3	15	11	8	7	5
Coqueluche	Whooping-cough	C.	—	—	3962	4664	5413	466	710	895	260	289	567	454	390	485	265	415	217
		D.	—	—	198	175	259	35	42	44	24	21	14	10	12	40	5	6	6
Diphtérie	Diphtheria	C.	2667	1935	1963	1635	1560	129	123	103	149	142	91	84	81	130	198	171	159
		D.	349	290	313	282	237	37	23	22	20	10	4	11	7	19	28	25	31
Dysenterie	Dysentery	C.	13279	2878	3977	3084	1311	26	27	16	14	16	77	223	301	307	195	92	17
		D.	2392	371	637	345	153	8	3	1	1	1	4	25	28	45	25	11	1
Encéphalite léthar.	Encephalitis lethar.	C.	60	15	—	—	38	3	7	11	2	0	4	4	3	2	1	0	1
		D.	15	4	—	—	12	2	1	2	2	1	0	1	1	0	0	1	1
Erysipèle	Erysipelas	C.	—	—	—	—	1173	84	87	93	96	82	78	83	61	108	113	162	126
		D.	—	—	—	—	46	7	1	3	3	6	0	2	3	5	7	7	2
Fièvre récurrente	Relapsing fever	C.	69	21	13	15	15	1	1	0	0	0	0	0	1	11	0	0	1
		D.	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvres typhoïde et paratyphoïde	Enteric fever	C.	4617	3906	3549	6403	4209	376	266	206	165	137	241	254	405	665	697	497	300
		D.	614	504	493	714	498	68	30	29	30	14	26	28	38	52	66	71	46
Lèpre	Leprosy	C.	—	—	—	—	9	4	0	0	0	0	0	1	0	1	3	0	0
		D.	—	—	—	—	1	0	0	0	0	0	0	0	0	0	0	0	1
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	59	65	—	—	120	8	18	19	15	16	12	7	3	7	5	4	6
		D.	31	30	—	—	48	2	7	6	5	7	5	9	0	1	3	1	2
Morve	Glanders	C.	—	—	—	—	6	0	0	0	0	2	0	3	0	1	0	0	0
		D.	—	—	—	—	5	0	0	0	0	1	0	3	0	1	0	0	0
Rage	Rabies	C.	—	—	—	—	14	5	0	1	0	0	3	1	0	1	0	2	1
		D.	—	—	—	—	14	3	1	2	0	0	3	1	0	1	0	2	1
Rougeole	Measles	C.	25265	5084	13087	24655	15568	1720	1880	2326	2299	2694	1338	566	78	166	964	652	885
		D.	589	203	219	342	263	34	27	44	25	51	22	34	6	4	4	6	6
Scarlatine	Scarlet fever	C.	15221	18048	16521	10107	8743	960	766	799	614	571	453	404	439	820	1028	1021	868
		D.	2771	3997	3669	2027	1787	212	150	173	122	119	115	77	95	174	184	185	181
Tétanos	Tetanus	C.	—	—	—	—	254	9	9	13	12	26	20	36	36	40	28	16	9
		D.	—	—	—	—	130	3	5	6	7	12	13	17	15	22	13	14	3
Typhus exanthém.	Typhus	C.	1054	232	351	319	388	36	51	26	45	107	80	15	4	3	5	3	13
		D.	133	26	49	22	53	1	7	0	7	19	16	2	0	0	1	0	0
Variole	Smallpox	C.	2119	728	1042	330	14	4	2	1	2	0	0	0	0	0	3	1	1
		D.	483	165	198	64	3	1	0	0	0	0	0	0	0	0	1	0	1

SUÈDE — SWEDEN

(Population: 6 053 560. E. 31 déc. 1925.)

Cas de maladies à déclaration obligatoire notifiés en 1919-1925 ; par quinzaines en 1925.
Cases of Notifiable Diseases reported in 1919-1925; by half-months in 1925.

Sources: Tableau résumé des Rapports relatifs aux épidémies, 1925. Rapport spécial pour les années 1919-1924. — Special Report for the years 1919-1924.

Quinzaine / Half-month			Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Enceph. leth.	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cer.-spin. men.	Poliomyélite aiguë Acute poliomyelitis	Scarlatine Scarlet fever	Chancre mou Soft chancre	Gonorrhée Gonorrhœa	Syphilis acquise Acquired syphilis: Primaire Primary	Secondaire Secondary	Total	Syphilis congénitale Congen. syph.
Total 1919			40514	53	—	3826	210000	116	820	9310	3327	20651	3363	2613	5976	148
» 1920			26448	71	352	1266	65194	102	181	9750	1237	14996	1756	1528	3284	165
» 1921			15133	125	1512	1123	20569	120	141	9264	879	12646	1317	940	2257	117
» 1922			6610	63	192	896	92671	79	112	10718	513	10953	807	648	1455	93
» 1923			4840	37	530	808	18032	85	309	10829	295	10337	575	512	1087	102
» 1924			4240	82	318	1401	30519	115	656	10882	215	10197	484	369	853	69
* » 1925			3822	106	186	1467	13466	121	505	10660	226	11364	399	277	676	54
Janvier	January	1-15	220	3	4	48	230	2	21	540	7	476	21	9	30	1
		16-31	238	3	10	45	346	4	13	589	10	470	22	11	33	3
Février	February	1-15	215	2	9	41	285	4	13	546	7	416	17	7	24	1
		16-28	175	3	8	36	324	4	7	444	9	383	20	10	30	1
Mars	March	1-15	177	0	11	26	505	3	6	393	6	395	17	10	27	2
		16-31	173	1	11	14	1698	10	7	476	5	382	25	10	35	2
Avril	April	1-15	125	2	8	18	1998	7	6	439	10	339	10	10	20	3
		16-30	144	0	7	21	1661	9	7	467	13	394	15	10	25	4
Mai	May	1-15	120	4	3	14	1731	6	2	479	8	442	13	10	23	4
		16-31	84	1	5	23	1366	6	10	499	12	410	9	16	25	3
Juin	June	1-15	97	0	4	46	899	5	6	435	15	419	13	9	22	1
		16-30	98	5	10	405	362	6	7	337	6	450	9	11	20	1
Juillet	July	1-15	106	6	11	136	117	13	2	282	6	455	7	7	14	0
		16-31	90	4	6	70	75	6	11	251	11	505	13	15	28	5
Août	August	1-15	100	6	8	63	61	1	18	284	7	586	15	9	24	4
		16-31	183	31	9	114	49	4	66	293	11	566	18	14	32	4
Septembre	September	1-15	185	9	10	81	42	5	59	325	6	606	17	17	34	1
		16-30	131	1	13	80	72	3	79	527	12	622	8	6	14	3
Octobre	October	1-15	156	2	12	32	82	4	53	545	17	581	18	10	28	2
		16-31	220	20	4	41	190	6	45	616	10	558	17	19	36	2
Novembre	November	1-15	202	0	5	37	196	4	21	556	8	499	22	11	33	2
		16-30	231	2	2	30	264	3	29	574	11	502	28	14	42	2
Décembre	December	1-15	197	0	12	19	375	2	10	393	7	458	26	20	46	3
		16-31	155	1	4	27	538	4	7	370	12	450	10	12	31	0

	1919	1920	1921	1922	1923	1924	1925
Variole — Smallpox	7	11	2	0	0	1	0

* Données provisoires. — Provisional data.

TCHÉCOSLOVAQUIE — CZECHOSLOVAKIA (Population: 13 982 726. E. 31 déc. 1923.)

Sources: Rapports spéciaux du Ministère de la Santé publique et d'Education. — Special Reports from the Ministry of Public Health and Education, 1921–1924. — Rapports sur les maladies épidémiques dans la République Tchécoslovaque, 1925.

Maladie — Disease			Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec
Charbon	Anthrax	C.	49	81	54	67	47	4	1	3	0	2	9	4	10	8	3	3	0
		D.	6	5	5	7	4	0	0	2	0	0	0	0	0	0	2	0	0
Diphtérie	Diphtheria	C.	4380	3223	3159	3548	4164	322	390	389	314	265	235	265	241	299	466	505	473
		D.	470	327	231	232	331	23	31	29	28	16	19	13	16	27	57	37	38
Dysenterie	Dysentery	C.	8238	1453	1539	1347	705	23	24	25	26	14	106	127	145	128	38	29	20
		D.	953	141	101	96	60	1	0	1	1	1	10	10	7	21	6	0	2
Encéphalite léthargique	Encephalitis lethargica	C.	—	150	366	97	189	15	25	41	44	11	14	14	9	2	8	4	7
		D.	—	59	119	32	43	2	2	8	11	4	1	10	0	0	2	2	1
Fièvre puerpér.	Puerperal fever	C.	720	643	638	580	566	53	54	55	57	45	29	49	40	41	43	46	54
		D.	361	318	277	214	230	21	21	17	28	16	10	13	17	19	23	20	25
Fièvre récurr.	Relapsing fever	C.	14	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fièvre paratyph.	Paratyph. fever	C.	—	—	—	175	87	3	13	7	3	3	7	2	15	13	12	5	4
		D.	—	—	—	6	1	0	0	0	0	0	1	0	0	0	0	0	0
Fièvre typhoïde	Typhoid fever	C.	9331*	6612*	5508*	6645	6749	511	441	328	322	359	506	685	737	873	812	650	529
		D.	969*	651*	416*	492	540	40	47	39	42	39	42	37	53	47	65	50	39
Grippe	Influenza	C.	—	86788	1407	—	8533	150	969	3942	2014	1059	134	69	29	18	32	66	51
		D.	—	597	57	—	120	4	16	9	27	13	23	10	4	1	6	4	3
Méningite cérébro-spinale	Cerebro-spinal meningitis	C.	80	190	142	145	154	8	28	26	16	19	10	10	4	11	1	7	14
		D.	34	73	46	51	59	3	5	10	11	6	5	5	0	5	2	3	4
Paludisme	Malaria	C.	130	76	266	134	198	2	4	2	18	33	43	54	11	11	11	9	0
		D.	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Rage humaine	Human rabies	C.	24	52	22	20	8	0	0	1	0	1	0	2	2	1	1	0	0
		D.	24	52	22	20	8	0	0	1	0	1	0	2	2	1	1	0	0
Scarlatine	Scarlet fever	C.	9425	10784	10522	9709	12543	1021	831	831	723	742	931	938	698	930	1781	1655	1462
		D.	906	1215	755	464	501	21	26	37	27	27	19	24	18	18	22	31	31
Trachome	Trachoma	C.	3252	2739	3338	2782	3235	192	222	237	296	361	344	276	210	274	266	294	263
		D.	970	321	366	44	204	14	24	16	1	0	0	3	0	0	8	86	52
Typhus exanth.	Typhus	C.	111	28	10	2	3	0	1	1	0	0	0	0	0	0	0	0	1
		D.	1542	70	36	9	3	0	0	0	3	0	0	0	0	0	0	0	0
Variole	Smallpox	D.	312	11	5	2	1	0	0	0	1	0	0	0	0	0	0	0	0

* Ces totaux comprennent aussi les données pour la fièvre paratyphoïde. — Data for paratyphoid fever are included in these totals.

SUISSE — SWITZERLAND

(Population: 3 917 800. E. 30 juin 1924.)

Cas de maladies à déclaration obligatoire notifiés en 1919-1926; par semaine en 1925.
Cases of Notifiable Diseases reported in 1919-1925; by weeks in 1925.

ource: Bulletin du Service fédéral de l'hygiène publique, Berne.

Semaine se terminant le: Week ending:		Coqueluche Whooping-cough	Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalitis lethargica	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre paratyph. Paratyph. fever	Fièvre typhoïde Typhoid fever	Grippe Influenza	Méningite cérébr.-spin. Cerebro-spinal men.	Oreillons Mumps	Poliomyélite aiguë Poliomyelitis, acute	Rougeole Measles	Scarlatine Scarlet fever	Varicelle Chickenpox	Variole Smallpox
Total	1919	3121	7690	36	—	204	63	62	298	86058	30	319	31	9127	3865	1455	3
»	1920	2514	8456	30	984	298	83	46	290	139809	39	956	104	15194	3939	1219	2
»	1921	1675	7702	32	156	232	72	57	394	2058	32	616	72	3070	3733	2112	596
»	1922	3439	4415	5	62	200	77	79	263	60295	30	246	65	3930	2272	2202	1153
»	1923	1571	3297	10	203	160	57	116	340	2150	69	185	257	10316	2137	2104	2126
»	1924	1536	2656	9	87	152	43	45	259	30292	33	1185	108	3242	2351	2079	1234
»	1925	2999	2617	13	71	134	30	87	328	5348	31	1002	93	5791	1981	2053	331
Janvier — January	10	47	76	0	2	1	1	1	9	19	0	31	2	* 87	57	* 61	6
	17	37	81	0	2	4	0	1	1	75	0	51	3	* 91	37	* 34	2
	24	27	90	0	0	6	1	2	1	86	0	39	3	* 96	49	* 50	9
	31	102	67	0	0	2	0	0	3	415	1	30	1	* 153	* 43	* 47	9
Février — February	7	95	59	0	1	6	0	0	3	316	0	45	2	* 98	32	* 61	14
	14	47	64	0	1	3	1	0	7	177	0	25	1	* 67	46	44	20
	21	58	73	0	2	4	0	0	2	308	1	54	0	* 85	* 53	72	27
	28	46	57	0	7	6	0	0	2	675	0	43	1	* 101	46	* 67	14
Mars — March	7	80	49	0	6	4	2	0	2	325	1	46	0	* 59	* 50	57	8
	14	63	63	0	3	1	2	1	0	768	1	53	0	102	39	42	5
	21	94	43	0	4	4	0	1	4	445	1	40	1	111	37	29	2
	28	69	57	0	8	6	0	0	7	721	0	73	0	* 135	41	38	13
Avril — April	4	72	44	0	4	2	2	1	1	519	0	42	0	129	45	40	7
	11	38	31	0	2	1	0	3	2	154	1	31	0	107	31	40	10
	18	48	54	2	2	3	0	3	3	82	1	26	2	51	57	27	8
	25	42	35	0	1	2	0	1	2	78	0	22	3	148	25	* 29	4
Mai — May	2	65	34	0	2	4	0	2	1	13	1	18	0	104	41	18	10
	9	83	56	0	5	2	1	0	4	20	2	15	0	109	48	12	5
	16	54	57	0	1	0	1	2	4	9	1	38	0	130	45	* 31	7
	23	61	50	0	1	3	1	0	1	0	0	12	0	* 108	27	50	0
	30	62	52	0	3	0	1	0	36	17	0	27	1	183	44	31	7
Juin — June	6	114	31	0	1	3	0	6	14	1	1	17	2	152	46	47	7
	13	88	41	0	2	1	0	4	10	2	1	20	0	* 151	28	55	8
	20	61	54	0	0	3	1	5	9	2	2	20	2	115	34	* 43	4
	27	93	45	0	0	4	1	0	1	0	0	20	0	157	29	* 31	3
Juillet — July	4	91	47	0	1	1	1	1	2	3	1	13	6	* 73	25	37	0
	11	77	45	0	4	3	1	15	13	18	2	7	0	92	38	56	1
	18	107	39	0	0	2	0	2	12	0	1	12	0	122	31	52	0
	25	44	25	0	0	3	0	0	13	0	0	12	3	103	35	36	0
Août — August	1	51	45	0	0	3	0	0	9	0	0	10	1	59	29	39	1
	8	71	40	0	0	1	0	4	8	0	0	7	3	35	27	36	0
	15	30	37	0	1	1	1	4	6	3	0	2	4	68	18	21	2
	22	42	51	2	0	3	1	2	17	2	1	1	3	30	33	20	0
	29	56	46	0	0	2	1	2	9	0	0	0	1	50	27	* 20	1
Septembre-September	5	79	52	1	1	0	0	2	4	0	0	5	2	40	33	36	1
	12	42	61	0	0	1	1	1	7	0	1	3	1	46	25	15	0
	19	68	46	8	0	5	1	0	14	1	2	5	7	42	27	23	15
	26	27	45	0	0	0	2	2	10	6	2	0	2	* 60	37	20	7
Octobre — October	3	74	36	0	1	1	1	6	4	4	0	7	3	* 46	46	34	2
	10	38	46	0	0	3	0	0	6	2	0	3	4	* 46	46	23	0
	17	34	46	0	0	2	0	4	3	7	0	3	5	90	32	39	2
	24	46	29	0	0	3	0	0	19	1	0	5	4	76	23	39	4
	31	39	42	0	0	1	0	2	7	4	0	7	5	103	55	29	6
Novembre-November	7	51	58	0	0	1	1	0	9	0	0	5	3	101	47	50	2
	14	24	48	0	0	3	2	0	6	2	1	3	3	110	52	41	10
	21	43	54	0	0	2	0	1	8	5	3	6	5	150	45	35	8
	28	28	71	0	0	1	1	0	3	8	0	2	1	152	35	39	12
Décembre-December	5	32	46	0	0	4	0	6	2	2	2	7	1	210	45	41	5
	12	24	54	0	1	3	0	0	2	20	0	19	2	199	31	54	17
	19	54	61	0	1	3	0	0	4	17	0	9	0	317	40	53	6
	26	28	35	0	1	2	0	0	2	11	0	* 3	0	289	38	57	15
926 Janv.-January	2	* 53	49	0	0	5	1	0	0	5	0	8	0	253	31	* 52	5

Autres maladies déclarées: — Other diseases notified:

Maladie — Disease		1919	1920	1921	1922	1923	1924	1925
Charbon	Anthrax	—	—	1	0	2	2	4
Erythème infectieux	Infectious erythema	—	—	—	—	—	1	75
Gastro-entérite aiguë	Acute gastro-enteritis	—	—	—	—	—	6	4
Hoquet épidémique	Epidemic hiccoughs	—	—	64	21	43	10	126
Ictère épidémique	Epidemic jaundice	—	—	—	—	—	2	39
Ophtalmoblennorrhée des nouveau-nés	Blennorrhagic ophthalmia of new-born infants	15	10	9	8	15	15	10
Paludisme	Malaria	—	24	5	3	5	6	4
Rubéole	German measles	238	352	237	43	56	52	251
Stomatite	Stomatitis	—	—	6	0	2	0	0
Teigne	Favus	—	5	0	0	0	12	5
Trachome	Trachoma	—	—	3	5	8	13	16
Typhus exanthématique	Typhus	—	1	2	0	0	0	0

* En outre, épidémie sans indication du nombre des cas.
* Epidemic, exact number of cases not known.

TERRITOIRE DE LA SARRE — SAAR TERRITORY

(Population: 773 764. E. 31 déc. 1925.)

Source: Rapports de la Commission de gouvernement. — Reports from the Governing Commission.

Semaine se terminant le: Week ending:	Diphtérie Diphtheria		Dysenterie Dysentery	Encéphalite léthargique Encephalitis lethargica		Fièvre puerpérale Puerperal fever		Fièvre paratyphoïde Paratyphoid fever	Fièvre typhoïde Typhoid fever		Méningite cérébro-spinale Cerebro-spinal meningitis		Scarlatine Scarlet fever		Tuberculose, toutes formes Tuberculosis, all forms	
	C.	D.	C.	C.	D.	C.	D.	C.	C.	D.	C.	D.	C.	D.	C.	D.
Total 1921	285	27	148	223	54	92	27	33	205	25	15	6	192	5	—	851
» 1922	208	35	28	21	7	79	29	17	193	26	27	11	148	2	—	923
» 1923	265	48	53	23	0	99	27	22	130	12	50	27	165	5	—	950
» 1924	311	44	11	29	12	72	16	58	136	14	76	28	256	7	1054	774
» 1925	274	25	24	18	6	73	22	41	158	13	66	30	204	4	1164	761
Janv.-January 10	7	0	0	2	0	0	0	0	1	0	1	0	4	0	10	14
17	6	0	0	0	0	2	1	0	3	0	0	0	2	0	18	19
24	7	0	0	0	0	4	0	0	1	0	2	0	2	0	39	7
31	5	0	0	1	0	1	1	0	2	0	1	0	3	0	28	12
Février-February 7	3	1	0	1	0	4	0	0	4	0	2	0	7	0	26	19
14	6	1	2	1	0	2	0	0	2	0	1	0	6	0	11	12
21	6	1	1	0	0	5	2	0	0	0	1	0	9	0	23	16
28	6	0	0	0	0	2	0	0	5	1	0	1	5	0	23	21
Mars-March 7	7	1	0	0	0	1	0	0	2	0	2	1	4	0	26	15
14	8	2	0	0	0	1	0	0	0	0	1	0	1	0	26	21
21	6	0	1	0	0	1	0	2	1	0	1	1	5	0	38	21
28	11	2	0	0	0	2	1	0	2	0	2	1	1	0	29	16
Avril-April 4	6	2	1	0	0	0	0	0	0	0	1	0	2	0	67	22
11	11	1	0	0	0	0	0	1	2	0	17	7	0	0	42	18
18	1	0	0	1	0	2	1	0	1	0	0	1	3	1	24	16
25	7	0	0	3	2	1	0	1	2	1	2	0	3	0	44	20
Mai-May 2	4	0	0	0	0	3	0	0	0	0	2	0	4	0	23	20
9	4	0	0	1	0	0	0	0	4	0	1	2	7	0	46	22
16	2	0	0	0	0	0	0	0	0	0	5	2	9	0	35	16
23	5	0	1	0	0	2	0	0	0	0	2	2	2	0	9	13
30	9	0	1	1	0	1	0	0	2	0	2	1	1	0	28	14
Juin-June 6	3	0	0	0	0	6	0	0	0	0	2	2	1	0	22	23
13	5	0	0	0	0	0	0	0	0	0	4	0	2	0	27	11
20	3	1	2	0	1	0	1	8	2	0	0	0	3	0	28	19
27	3	0	0	0	0	0	0	0	0	0	0	0	1	0	16	15
Juillet-July 4	4	0	0	0	0	3	1	4	7	0	0	1	5	0	14	13
11	3	1	0	0	0	0	1	2	3	1	1	2	3	1	18	8
18	8	0	1	0	0	2	2	0	5	2	0	1	6	0	24	14
25	8	0	3	1	0	2	0	1	4	0	0	1	3	0	15	13
Août-August 1	5	0	1	0	0	1	4	2	1	0	1	0	2	0	13	15
8	4	0	0	0	0	1	0	4	4	0	0	0	1	0	20	14
15	3	0	0	0	0	2	0	2	5	0	1	2	3	0	23	18
22	5	0	1	0	0	0	0	1	4	0	2	0	3	0	22	11
29	3	1	3	0	0	1	0	1	4	2	0	0	0	0	14	11
Sept.-Sept. 5	5	0	1	1	1	1	1	2	5	0	0	0	3	0	10	14
12	5	1	0	0	0	1	0	0	7	0	0	0	2	0	9	9
19	3	2	1	0	0	2	1	1	5	1	0	0	2	0	14	10
26	2	0	2	0	0	2	0	1	1	0	3	0	6	1	24	13
Octobre-Oct. 3	6	0	2	0	0	1	0	1	4	0	0	0	5	0	15	12
10	0	0	0	0	0	4	2	0	7	1	1	1	8	0	21	11
17	3	0	0	0	0	1	0	0	3	0	1	0	4	0	12	13
24	6	2	0	0	0	1	0	0	1	0	0	0	4	0	17	14
31	4	0	0	0	0	0	0	1	3	0	0	0	3	0	16	7
Nov.-Nov. 7	4	1	0	0	0	2	0	1	2	1	0	0	5	0	20	8
14	12	0	0	0	0	0	1	0	10	0	2	0	8	0	21	12
21	8	0	0	0	0	1	0	0	12	1	0	0	8	0	15	14
28	3	0	0	1	0	0	0	2	7	0	0	0	5	0	22	14
Déc.-Dec. 5	7	1	0	0	0	2	2	1	4	0	1	1	9	1	14	15
12	6	1	0	1	0	1	0	1	4	0	0	0	2	0	14	25
19	6	1	0	3	2	1	0	1	8	1	0	0	12	0	26	15
26	8	1	0	0	0	0	0	0	0	1	1	0	1	0	15	8
1926. Janv.-January 2	2	1	0	0	0	1	0	0	2	0	0	0	4	0	8	8

Autres maladies déclarées: — Other diseases notified:

	Botulisme Botulism		Dysenterie Dysentery	Fièvre paratyphoïde Paratyphoid fever	Poliomyélite Poliomyelitis		Trachome Trachoma
	C.	D.	D.	D.	C.	D.	C.
1921	—	—	11	1	—	—	—
1922	—	—	1	0	—	—	—
1923	—	—	9	2	3	3	6
1924	1	0	1	2	2	0	3
1925	0	0	2	0	0	0	15

Divisions	Anthrax			Asiatic cholera			Diphtheria			Dysenterie Dysenteric			Encéphal. léthar. Encéph. lethar.			Fièvre récurrente Relapsing Fever			Divisions
	1923	1924	1925	1923	1924	1925	1923	1924	1925	1923	1924	1925	1923	1924	1925	1923	1924	1925	
Région du nord-est	25	1	7	0	0	0	184	395	269	1497	4358	7908	7	2	8	1429	325	18	North-Eastern Region
Région du nord-ouest	79	22	40	0	0	0	1539	2047	2348	3843	12014	8562	61	134	79	1154	501	816	North-Western Region
Région de l'ouest	83	179	159	0	0	0	2865	2723	3569	7666	14348	8962	29	12	6	3983	343	243	Western Region
Région centrale industrielle	341	646	560	9	1	0	6697	10491	10456	22532	47349	33935	125	297	199	10532	2022	819	Central Industr. Region
Région centrale de la terre noire	982	2178	1744	0	0	1	4934	5870	4864	20483	32081	16532	160	107	129	18305	2857	1999	Central Black Earth Region
Région du Volga moyen	970	1411	1623	11	0	0	3626	5642	4512	27082	28986	22885	5	135	174	21862	4635	1940	Middle Volga Region
Région du Volga inférieur	484	1322	1416	0	0	0	2432	3152	2792	10848	14977	10812	28	153	92	9031	3021	2008	Lower Volga Region
Région de Viatka-Vietluga	74	61	79	2	0	0	429	633	728	8968	10843	23978	1	50	22	7279	485	158	Viatka-Vietluga Region
Région de l'Oural	291	363	552	0	0	0	1996	3324	3709	24350	32122	40619	4	26	5	60134	11190	2602	Ural Region
Rép. Sov. de la Crimée	147	337	264	3	0	0	425	328	377	462	596	1244	14	28	6	457	186	199	Sov. Rep. of Crimea
Caucase du Nord	955	1463	2055	94	8	9	1816	3107	4300	8954	12986	15649	177	140	379	13368	4394	1774	North Caucasus
Rép. Sov. de Daghestan	16	78	136	0	0	1	9	36	38	240	484	757	—	3	8	558	385	54	Daghestan Sov. Rep.
Transcaucasie	285	625	872	3	0	0	481	1062	1138	2592	10563	15694	16	3	52	1609	1782	737	Transcaucasus
Sibérie et Territoire de l'Extr.-Orient	342	588	361	2	1	0	2986	3940	4078	28247	46130	33366	11	49	127	28561	6930	1731	Siberia and Far-Eastern Territory
Gouv. d'Orenbourg (Kirghizes)	178	522	62	5	0	0	379	758	178	4848	5130	734	1	26	10	5820	3466	151	Gov. of Orenburg (Kirghizes)
Rép. Sov. des Cosaques			834			1			585			7042			130			1311	Cossack Sov. Rep.
Rép. Sov. des Ousbeks			52			0			298			3029			8			85	Usbek Sov. Rep.
Rép. Sov. des Tourkmènes (Turkestan)	92	95	123	4	0	0	283	318	63	2666	2924	1016	33	6	35	2082	1209	64	Turkmen Sov. Rep. (Turkestan)
Rép. aut. des Kirghizes			61			0			87			689			—			10	Kirghiz. aut. Rep.
Rép. Sov. de la Russie Blanche	3	65	49	0	0	0	573	3065	3590	1416	6336	4953	52	134	73	1401	474	192	White Russian Sov. Rep.
Ukraine	2309	5392	5041	14	0	0	13353	17063	19330	25816	45293	24343	196	685	551	54814	4785	1379	Ukraine
Chemins de fer, voies fluviales et prisons	145	148	82	2	0	0	2763	2391	2121	12352	8363	5808	40	86	39	15892	1545	350	Railways, Waterways and Prisons
Total pour U. R. S. S.	7801	15496	16172	149	10	12	47770	66345	69430	214862	335883	288517	960	2076	2132	258271	50535	18640	Total for U. S. S. R.

Divisions	Fièvre typhoïde Enteric Fever			Grippe Influenza			Paludisme Malaria			Peste Plague			Rougeole Measles			Scarlatine Scarlet Fever			Divisions
	1923	1924	1925	1923	1924	1925	1923	1924	1925	1923	1924	1925	1923	1924	1925	1923	1924	1925	
Région du nord-est	1145	1615	3196	29648	62618	78863	38932	11468	6535	—	—	—	2774	4379	13763	3323	4449	4836	North-Eastern Region
Région du nord-ouest	2743	5645	8580	36081	80346	110089	4501	5725	4691	—	—	—	7104	32894	34067	3561	11623	21346	North-Western Region
Région de l'ouest	7464	6885	11057	63014	65933	94358	21381	18787	20654	—	—	—	5129	9380	28196	4813	6562	13487	Western Region
Région centrale industrielle	17042	35793	31111	172628	347550	552326	334815	195710	123277	—	—	—	40409	85466	90541	20675	52269	57911	Central Industr. Region
Région centrale de la terre noire	15487	20717	15167	94015	121196	147775	273680	349905	321189	—	—	—	5001	10260	43470	16327	16777	12705	Central Black Earth Region
Région du Volga moyen	9843	7638	6883	123150	152523	179940	1183871	851516	701565	—	—	—	4391	10366	25931	9755	14084	11122	Middle Volga Region
Région du Volga inférieur	3690	5475	3617	33009	71246	94543	754025	660571	684570	57	22	169	4055	10198	22955	7216	10122	7035	Lower Volga Region
Région de Viatka-Vietluga	1854	2399	3560	46038	59448	74572	66292	57508	27014	—	—	—	3564	2427	14400	2856	4054	3282	Viatka-Vietluga Region
Région de l'Oural	9629	8518	10438	56056	187683	262714	375854	714232	348203	—	—	—	1409	16231	37490	1960	9720	14533	Ural Region
Rép. Sov. de la Crimée	1142	930	1279	10222	11553	25638	6295	13575	17139	—	—	—	2051	1151	7167	626	757	549	Sov. Rep. of Crimea
Caucase du Nord	6940	4621	4728	50601	86062	138175	782216	814330	869991	—	—	23	7661	14724	36503	1294	4803	13707	North Caucasus
Rép. Sov. de Daghestan	45	176	105	1090	5820	9017	20047	38606	42183	—	—	—	97	507	899	3	39	43	Daghestan Sov. Rep.
Transcaucasie	1694	3498	2494	3684	44509	55313	153234	320390	348936	—	—	—	7325	7974	6664	330	590	832	Transcaucasus
Sibérie et Territoire de l'Extr.-Orient	14071	13432	10829	113544	204047	235638	218120	425693	350262	3	6	1	11286	33804	43470	7128	10568	15074	Siberia and Far-Eastern Territory
Gouv. d'Orenbourg (Kirghizes)	1801	1910	398	19492	34449	10630	171032	202167	81591	429	52	—	872	3322	2735	281	1448	735	Gov. of Orenburg (Kirghizes)
Rép. Sov. des Cosaques			1334			37394			142417			60			6335			1269	Cossack Sov. Rep.
Rép. Sov. des Ousbeks			1003			20564			97015	—		—			1545			172	Usbek Sov. Rep.
Rép. Sov. des Tourkmènes (Turkestan)	1059	731	212	9189	15093	3488	80563	68744	17394	—	124	—	1085	1466	533	95	63	20	Turkmen Sov. Rep. (Turkestan)
Rép. aut. des Kirghizes			413			3082			19318	—		—			775			143	Kirghiz Aut. Rep.
Rép. Sov. de la Russie Blanche	726	4674	5341	18011	52031	82672	2833	8218	14607	—	—	—	1520	10354	28139	664	4420	12260	White Russian Sov. Rep.
Ukraine	31514	37330	34128		140902	376162	459842	912803	675889	—	—	—	19045	45651	150627	19474	37883	58731	Ukraine
Chemins de fer, voies fluviales et prisons	6023	3962	3746	181544	111382	13541*	609323	313529	210279	—	—	—	—	28137	35639	7858	9580	12071	Railways, Waterways and Prisons
Total pour U. R. S. S.	133912	165949	159619	1111016	1854391	2606494	5556856	5983477	5124719	489	204	253	124778	328691	631844	108239	199811	261863	Total for U. S. S. R.

Divisions	Scorbut Scurvy			Trachome Trachoma			Tuberculose pulmonaire Pulmonary Tuberculosis			Tubercul., autres formes Tubercul., other forms			Typhus exanthém. Typhus			Variole Smallpox			Divisions
	1923	1924	1925	1923	1924	1925	1923	1924	1925	1923	1924	1925	1923	1924	1925	1923	1924	1925	
Région du nord-est	566	4457	1420	1394	3611	4487	6267	9416	12269	2026	4627	7972	6101	4302	1926	8653	4423	535	North-Eastern Region
Région du nord-ouest	3207	2947	1725	7523	12800	27114	18153	28747	41385	4166	9317	13816	6084	7606	4962	1103	866	187	North-Western Region
Région de l'ouest	1947	1306	1483	9124	13666	22565	24521	24307	35946	1172	3750	5005	8216	7011	4356	779	397	216	Western Region
Région centrale industrielle	5504	3391	3776	13268	17979	43251	110393	147595	185461	22109	34106	30570	34454	27972	12844	3003	2049	758	Central Industr. Region
Région centrale de la terre noire	4547	3806	4471	14718	15601	24948	34128	45664	55180	2966	6610	11868	15659	8888	5144	2026	436	271	Central Black Earth Region
Région du Volga moyen	10611	8119	6868	57624	85122	127637	43143	64484	86298	18343	22730	35382	22319	12071	6575	3472	4431	2508	Middle Volga Region
Région du Volga inférieur	1120	2411	3188	11144	36731	40200	19357	35300	50723	705	4577	9446	6881	5894	2290	436	269	449	Lower Volga Region
Région de Viatka-Vietluga	4404	3132	2197	51472	71497	115587	18148	21902	30595	6744	12756	12201	22181	4926	3900	2693	1091	1531	Viatka-Vietluga Region
Région de l'Oural	2227	8079	8601	24305	73214	93365	12228	75915	100542	5315	21166	31089	39588	9608	4933	4084	5432	3762	Ural Region
Rép. Sov. de la Crimée	453	93	107		680	1628		2712	12003			1977	828	280	155	472	43	4	Sov. Rep. of Crimea
Caucase du Nord	2649	885	6496	9496	7714	21453	24884	37105	66657	6805	17266	22515	4759	1497	871	2274	710	221	North Caucasus
Rép. Sov. de Daghestan	150	1252	1449	7521	1555	1902		381	3028		1349	1109	85	103	65	20	106	292	Daghestan Sov. Rep.
Transcaucasie	712	2175	1131		30660	45982	6390	23516	13726	1186	4270	4164	2663	1447	496	734	458	268	Transcaucasus
Sibérie et Territoire de l'Extr.-Orient	1343	4456	4312	25938	55629	65910	26366	43406	54057	5276	14534	17656	26124	11363	6012	7221	3758	3287	Siberia and Far-Eastern Territory
Gouv. d'Orenbourg (Kirghizes)	438	4343	1040	9315	12045	2890	7442	9930	5016	2907	6171	2054	1512	1287	139	940	1286	35	Gov. of Orenburg (Kirghizes)
Rép. Sov. des Cosaques			3413			18253			14567			8090			908			533	Cossack Sov. Rep.
Rép. Sov. des Ousbeks			2245			9738			10609			5599			65			468	Usbek Sov. Rep.
Rép. Sov. des Tourkmènes (Turkestan)	1223	3501	171	9187	6648	13853	6622	5523	2333	1256	2193	954	1249	1171	55	719	541	61	Turkmen Sov. Rep. (Turkestan)
Rép. aut. des Kirghizes			682			2093			1399			607			71			25	Kirghiz Aut. Rep.
Rép. Sov. de la Russie Blanche	1689	810	906	13184	22720	35968	16056	25806	36866	1026	4739	10894	2353	4820	4305	118	159	193	White Russian Sov. Rep.
Ukraine	—	1113	5505	—	49592	70216	—	—	—	—	—	—	31307	14219	9123	3710	1188	501	Ukraine
Chemins de fer, voies fluviales et prisons	4781	1570	1520	—	648	3436	—	27010	41583	—	2720	6539	10527	2400	1220	2178	731	356	Railways, Waterways and Prisons
Total pour U. R. S. S.	47571	57846	62706	265213	518112	792476	374098	628719	860243	82002	170601	239507	242890	126865	70415	44626	28374	16461	Total for U. S. S. R.

* Données ne concernant que les prisons. — Data concerning the prisons only.

UNION DES RÉPUBLIQUES SOVIÉTIQUES SOCIALISTES — UNION OF SOCIALIST SOVIET REPUBLICS

Cas de certaines maladies transmissibles déclarés en 1924 et 1925; par mois en 1925.

Cases of Certain Communicable Diseases reported in 1924 and 1925; by months in 1925.

Source: Rapports du Bureau statistique du Commissariat du Peuple pour la Santé publique. — Reports from Statistical Bureau, People's Health Commissariat.

Maladie — Disease		Total 1924	Total 1925	1925 Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août August	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
U R S S (total) — U S S R (Total). (Population: 139 753 900. E. 1. janv. 1925.)															
Charbon	Anthrax	15496	16172	1028	824	672	684	824	1227	2238	2849	2190	1536	1105	995
Choléra asiatique	Asiatic cholera	10	12	0	0	0	0	1	6	5	0	0	0	0	0
Diphtérie	Diphtheria	66345	69430	6978	6423	6148	5195	5135	5319	4415	4445	6247	7264	6321	5540
Dysenterie	Dysentery	335883	288517	5902	6019	6343	7069	12387	26385	63735	91849	40611	14560	8519	5138
Encéphalite létharg.	Encephalitis letharg.	2076	2132	152	144	233	210	160	214	217	164	195	190	128	125
Fièvre récurrente	Relapsing fever	50535	18640	2347	2001	1774	1374	1307	1235	1320	1675	1465	1001	1276	1865
Fièvre typhoïde	Enteric fever	165949	159619	14762	11598	10747	8172	7753	7163	9442	18205	26663	19357	14222	11535
Grippe	Influenza	1854391	2606494	317584	362738	316137	210780	171217	156302	144916	156947	178269	183426	203636	204542
Paludisme	Malaria	5983477	5124719	182797	227056	361964	523911	643891	586551	486453	619290	601096	404437	287983	199290
Peste	Plague	204	253	0	0	0	0	12	52	82	55	0	5	8	39
Rougeole	Measles	328691	631844	60927	69981	83451	73998	71804	62062	45353	27566	19573	28619	44424	44086
Scarlatine	Scarlet fever	199811	261863	25138	22464	23080	17130	18662	19309	17499	18856	23799	27659	26649	21618
Scorbut	Scurvy	57846	62706	4992	5541	7003	7488	7858	7766	6331	5014	3899	2830	2273	1711
Trachome	Trachoma	518112	792476	55708	61773	70692	59451	79184	87134	82928	69340	66406	55242	55144	49474
Tuberculose pulmon.	Pulmonary tubercul.	628719	860243	79749	83921	94478	84611	94388	88188	75088	57335	53938	47896	50376	50275
Tuberculose, autres formes	Tuberculosis, other forms	170601	239507	18850	20797	25111	21665	27266	27324	21760	17524	16787	14530	14796	13097
Typhus exanthém.	Typhus	126865	70415	10445	10422	11871	9744	7881	4829	2592	1601	1574	1917	3020	4516
Variole	Smallpox	28374	16461	2713	2647	2286	1581	1737	1520	757	538	398	717	883	684
GOUVERNEMENTS ET TERRITOIRES D'EUROPE (Ukraine non comprise) GOVERNMENTS AND TERRITORIES IN EUROPE (without the Ukraine) (Population: 83 500 100. E. 1. janv. 1925.)															
Charbon	Anthrax	8126	8684	571	474	315	343	472	665	1319	1608	1095	726	530	566
Choléra asiatique	Asiatic cholera	9	11	0	0	0	0	1	5	5	0	0	0	0	0
Diphtérie	Diphtheria	40813	41552	4150	3928	3771	3168	3222	3277	2725	2721	3734	4155	3590	3111
Dysenterie	Dysentery	217480	196796	3932	3905	3988	4486	8469	16533	44880	68942	27324	7121	4213	3003
Encéphalite létharg.	Encephalitis letharg.	1221	1180	97	95	156	106	76	77	120	106	136	58	58	95
Fièvre récurrente	Relapsing fever	30818	12822	1524	1274	1108	826	817	777	906	1396	1137	729	894	1434
Fièvre typhoïde	Enteric fever	105086	105062	8674	7041	6762	5321	5165	4688	6628	13452	19273	11830	8869	7359
Grippe	Influenza	1304009	1850682	226486	255744	219319	144028	119876	111129	102105	116541	131493	128055	146679	149227
Paludisme	Malaria	3740151	3181618	132492	161392	214744	274435	361104	303809	276131	422625	429011	265849	195357	144669
Peste	Plague	22	192	0	0	0	0	9	47	78	55	0	0	1	2
Rougeole	Measles	208337	383521	38789	44585	52603	44634	42709	37745	28257	16861	12036	15631	24847	24824
Scarlatine	Scarlet fever	139679	172816	17776	16155	16638	11830	13437	14171	12604	12168	14639	15379	15681	12338
Scorbut	Scurvy	40388	42687	3275	4080	4736	5191	5493	5395	4421	2970	2408	1872	1498	1348
Trachome	Trachoma	362890	560105	40583	47578	51240	42745	60893	62964	58011	46907	44127	33323	35473	36261
Tuberculose pulmon.	Pulmonary tubercul.	519334	716953	69012	71591	78703	70178	78943	73286	62162	46919	44767	37579	40457	43356
Tuberculose, autres formes	Tuberculosis, other forms	140713	193844	16250	17610	20934	17523	22295	21967	16743	13686	13455	10867	11164	11350
Typhus exanthém.	Typhus	94978	52326	7685	7773	9125	7271	6069	3620	1912	1151	1127	1270	2154	3169
Variole	Smallpox	20412	10927	1718	2002	1658	1060	1071	1044	471	303	274	379	511	436
UKRAINE (Population: 27 663 900. E. 1. janv. 1925.)**															
Charbon	Anthrax	5392	5041	356	273	258	241	263	343	648	852	652	466	346	343
Coqueluche	Whooping-cough	33014	65370	2791	2973	3672	3851	4794	8839	9497	9159	7048	4870	4115	3761
Diphtérie	Diphtheria	17063	19330	2012	1646	1482	1324	1207	1360	1059	1193	1792	2206	2096	1953
Dysenterie	Dysentery	45293	24343	967	1023	1094	1146	1385	2252	3295	4832	3947	2301	1229	872
Encéphalite létharg.	Encephalitis letharg.	685	551	40	36	42	74	64	79	56	35	26	25	45	29
Fièvre récurrente	Relapsing fever	4785	1379	173	122	108	118	99	78	82	65	72	94	172	196
Fièvre typhoïde	Enteric fever	37330	34128	4342	3222	2570	1812	1502	1337	1438	2582	4315	4477	3448	3083
Fièvre paratyphoïde	Paratyphoide fever	—	3029	281	233	174	439	95	143	136	266	386	337	266	273
Grippe	Influenza	140902	376162	43345	60057	50245	28482	19387	18833	18505	18482	22870	27435	30384	38137
Méningite cérébro-spinale	Cerebro-spinal meningitis	685	822	62	81	81	96	106	77	74	42	43	46	61	53
Paludisme	Malaria	912803	675889	10960	20404	63360	120616	124751	119792	74681	54754	41303	21743	13967	9558
Rougeole	Measles	45651	150627	11239	14575	18457	19097	17517	13691	9288	5724	4474	8421	13517	14627
Scarlatine	Scarlet fever	37883	58731	4585	3837	3369	3056	3059	3131	3062	4446	6662	8693	7840	6991
Scorbut	Scurvy	1113	5505	724	653	881	751	1008	737	—	534	217	—	—	—
Trachome	Trachoma	49592	70216	5806	6032	6184	5628	5541	5991	6417	5235	4222	5884	7153	6123
Typhus exanthém.	Typhus	14219	9123	1370	1341	1308	1333	878	559	248	193	153	299	502	939
Variole	Smallpox	1188	501	89	71	36	42	54	44	21	26	24	28	28	38
TRANSCAUCASIE, SIBERIE ET ASIE CENTRALE — TRANSCAUCASUS, SIBERIA AND CENTRAL ASIA (Population: 28 589 900 E. 1. janv. 1925.)															
Charbon	Anthrax	1830	2365	99	72	94	93	88	211	260	379	437	336	216	80
Choléra asiatique	Asiatic cholera	1	1	0	0	0	0	0	1	0	0	0	0	0	0
Diphtérie	Diphtheria	6078	6427	590	656	678	561	557	526	505	414	517	660	474	289
Dysenterie	Dysentery	64747	61570	842	888	1086	1237	2222	6948	14419	16501	8759	4828	2748	1092
Encéphalite léthar.	Encephalitis lethargica	84	362	10	8	34	27	12	54	39	20	32	103	23	0
Fièvre récurrente	Relapsing fever	13387	4089	614	576	530	407	361	356	303	193	242	153	165	189
Fièvre typhoïde	Enteric fever	19571	16683	1453	1128	1156	823	739	956	1106	1753	2551	2658	1557	803
Grippe	Influenza	298098	366109	46057	45313	44356	36637	30978	25680	23667	21089	22945	26893	25767	16727
Paludisme	Malaria	1016994	1056933	27670	35552	67608	108162	138378	143637	122595	112571	105262	97796	64139	33563
Peste	Plague	182	61	0	0	0	0	3	5	4	0	0	5	7	37
Rougeole	Measles	46566	62057	6321	6923	8180	6733	7522	6958	5556	3417	2053	2754	3626	2014
Scarlatine	Scarlet fever	12669	18245	1694	1591	1993	1490	1359	1168	1185	1255	1371	2145	1930	1064
Scorbut	Scurvy	14475	12994	807	605	1185	1288	1231	1503	1730	1430	1241	916	741	317
Trachome	Trachoma	104982	158719	9007	7772	12985	10689	12429	17895	18311	17026	17804	15900	12143	6758
Tuberculose pulmon.	Pulmonary tubercul.	82375	101707	6502	8154	10924	10267	11249	11128	10300	7811	6790	7789	7093	3700
Tuberculose, autres formes	Tuberculosis, other forms	27168	39124	2094	2558	3521	3694	4265	4581	4654	3470	2944	3220	2996	1127
Typhus exanthém.	Typhus	15268	7746	1227	1108	1203	983	849	593	396	233	270	311	296	277
Variole	Smallpox	6043	4677	854	525	568	439	571	398	249	197	93	291	302	190
VOIES FLUVIALES, CHEMINS DE FER ET PRISONS — WATERWAYS, RAILWAYS AND PRISONS															
Charbon	Anthrax	148	82	2	5	5	7	1	8	11	10	6	8	13	6
Diphtérie	Diphtheria	2391	2121	226	193	217	142	149	156	126	117	204	243	161	187
Dysenterie	Dysentery	8363	5808	161	203	175	200	311	652	1141	1574	581	310	329	171
Encéphalite létharg.	Encephalitis letharg.	86	39	5	5	1	3	8	4	2	3	1	4	2	1
Fièvre récurrente	Relapsing fever	1545	350	36	29	28	23	30	24	29	21	14	25	45	46
Fièvre typhoïde	Enteric fever	3962	3746	293	207	259	216	347	182	270	418	524	392	348	290
Grippe	Influenza	111382	* 13541	1696	1624	2217	1633	976	660	639	835	961	1043	806	451
Paludisme	Malaria	313529	210279	11675	9708	16252	20698	19658	19313	13046	29340	25520	19049	14520	11500
Rougeole	Measles	28137	35639	4578	3898	4211	3534	4056	3668	2252	1564	1010	1813	2434	2621
Scarlatine	Scarlet fever	9580	12071	1083	881	1080	754	807	839	648	987	1127	1442	1198	1225
Scorbut	Scurvy	1570	1520	186	203	201	258	126	131	180	80	33	42	34	46
Trachome	Trachoma	648	3436	312	391	283	389	321	284	189	172	253	135	375	332
Tuberculose pulmon.	Pulmonary tubercul.	27010	41583	4235	4176	4851	4166	4196	3774	2626	2605	2381	2528	2826	3219
Tuberculose, autres formes	Tuberculosis, other forms	2720	6539	506	629	656	448	706	776	363	368	388	443	636	620
Typhus exanthém.	Typhus	2400	1220	166	200	235	157	85	57	36	24	24	37	68	131
Variole	Smallpox	731	356	52	49	24	40	41	34	16	12	7	19	42	20

* Données ne concernant que les prisons. — Information concerning prisons only.

** Dans les données de l'Ukraine sont comprises celles pour la République A.S.S. de Moldavie, mais non celles pour les chemins de fer ukrainiens. — Information for Ukraine includes data for A.S.S. Republic of Moldavia but not those for the Ukrainian Railways.

RENSEIGNEMENTS MÉTÉOROLOGIQUES POUR CERTAINES GRANDES VILLES
METEOROLOGICAL REPORTS FOR CERTAIN LARGE CITIES

TEMPÉRATURE MOYENNE DE L'AIR, EN CENTIGRADES (moyenne quotidienne)
MEAN TEMPERATURE OF THE AIR, IN CENTIGRADES (daily average)

Villes	1925 — Période de quatre semaines se terminant le: — Four-week period ending:													Cities
	24 Janv. Jan.	21 Fév. Feb.	21 Mars March	18 Avril April	16 Mai May	13 Juin June	11 Juill. July	8 Août Aug.	5 Sept. Sept.	3 Oct. Oct.	31 Oct. Oct.	28 Nov. Nov.	26 Déc. Dec.	
Londres	5.4	6.0	4.9	7.0	9.6	15.9	15.8	17.5	15.7	12.3	10.9	5.2	2.6	London
Glasgow	5.2	4.6	4.9	5.9	8.4	12.8	15.0	15.6	14.1	10.7	10.4	3.7	1.8	Glasgow
Birmingham	4.9	5.3	4.6	6.3	8.6	14.5	15.0	16.9	15.2	11.7	10.6	4.1	1.5	Birmingham
Bristol	6.1	6.0	5.6	7.1	9.8	15.5	16.5	17.4	16.0	12.4	12.0	3.8	2.6	Bristol
Manchester	5.4	5.7	5.0	7.3	9.4	15.2	15.4	17.4	15.0	11.6	10.3	3.7	1.9	Manchester
Dublin	5.8	4.9	5.1	6.0	8.2	12.2	14.4	15.4	14.8	11.2	10.2	4.3	3.3	Dublin
Belfast	5.6	5.2	5.6	6.8	8.5	12.9	15.9	16.3	14.5	12.0	10.8	5.6	4.5	Belfast
Copenhague	4.6	3.5	0.9	4.6	9.4	14.5	14.5	18.9	16.1	12.6	7.5	3.5	− 0.8	Copenhagen
Oslo	1.0	0.2	− 2.0	3.7	9.2	14.7	16.8	20.1	15.4	11.2	6.0	− 2.8	− 8.5	Oslo
Stockholm	1.8	1.5	− 2.8	4.3	8.1	13.0	15.6	19.7	16.0	11.1	3.5	− 1.4	− 5.4	Stockholm
Berlin	4.1	5.2	2.0	8.4	12.6	18.6	15.8	20.9	17.3	12.7	9.2	3.8	− 1.3	Berlin
Munich	1.3	4.1	0.6	7.5	10.4	16.8	15.4	18.1	16.9	11.7	8.7	2.8	− 1.7	Munich
Lodz	2.7	2.9	1.9	6.6	12.8	16.1	14.1	18.9	15.7	14.7	6.5	2.8	− 3.2	Lodz
Le Caire	11.8	13.6	17.7	18.9	24.3	25.8	28.3	28.7	27.8	25.9	24.7	21.8	16.5	Cairo
Alexandrie	12.9	14.5	16.4	16.8	20.3	21.9	24.5	25.9	26.3	25.5	23.9	21.6	16.7	Alexandria
Rio de Janeiro	25.2	25.2	24.4	23.9	24.0	19.7	18.8	19.6	22.0	20.8	—	—	—	Rio de Janeiro
	Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.		
Paris	5.0	5.6	4.6	10.0	14.3	17.6	19.1	17.9	13.3	11.7	4.3	3.6		Paris
Strasbourg	3.2	5.3	3.4	10.3	15.5	18.3	19.3	18.2	12.5	10.4	3.1	1.9		Strasburg
Toulon	8.0	8.7	8.4	14.0	16.1	22.3	23.4	22.8	19.5	17.1	10.3	8.6		Toulon
Bruxelles	4.3	5.0	3.6	8.4	13.6	15.1	17.6	16.0	11.6	10.4	8.2	2.6		Brussels
Amsterdam	4.0	4.5	3.3	8.0	13.8	15.8	19.1	16.8	12.0	9.7	7.8	1.6		Amsterdam
Genève	2.5	4.4	1.6	9.2	14.3	17.6	18.3	17.8	13.3	10.9	3.9	3.2		Geneva
Gênes	10.7	10.1	9.4	13.7	18.2	22.9	22.3	23.6	20.1	18.5	12.3	8.3		Genoa
Milan	3.4	5.6	7.0	12.4	17.3	22.6	23.1	23.3	17.8	14.0	7.7	1.3		Milan
Venise	4.4	6.5	7.2	13.0	17.3	20.7	22.7	22.8	18.3	14.7	9.0	2.2		Venice
Budapest	0.2	5.7	5.2	11.6	18.2	18.4	21.6	20.7	14.8	11.7	6.0	− 2.3		Budapest
Cracovie	2.6	4.7	2.6	9.6	15.5	15.1	19.0	17.9	13.4	10.0	3.7	− 1.2		Cracow
Prague	2.4	4.3	2.0	9.5	15.6	16.0	18.6	17.8	12.5	9.0	3.0	− 0.5		Prague
New-York	− 1.6	3.6	6.4	10.7	14.6	22.9	22.5	22.2	19.7	9.9	6.5	1.4		New York
Buenos-Aires	24.0	25.4	23.1	16.1	11.3	8.4	8.3	11.6	13.2	15.8	19.6	23.1		Buenos Aires
Santiago (Chili)	21.2	19.2	17.6	13.4	9.8	8.9	8.2	10.7	11.8	14.4	16.4	20.0		Santiago (Chile)

RENSEIGNEMENTS MÉTÉOROLOGIQUES POUR CERTAINES GRANDES VILLES
METEOROLOGICAL REPORTS FOR CERTAIN LARGE CITIES
(Suite — Continued.)

HUMIDITÉ RELATIVE DE L'AIR, EN % (moyenne quotidienne); Saturation égale 100.
RELATIVE HUMIDITY OF THE AIR PER CENT (daily average); Saturation equals 100.

Villes	1925 — Période de quatre semaines se terminant le: — Four-week period ending:												Cities
	24 Janv. Jan.	21 Fév. Feb.	21 Mars March	18 Avril April	16 Mai May	13 Juin June	11 Juill. July	8 Août Aug.	5 Sept. Sept.	3 Oct. Oct.	31 Oct. Oct.	28 Nov. Nov.	26 Déc. Dec.	
Londres	86	84	79	77	77	68	68	74	80	82	85	85	88	London
Copenhague	78	77	78	69	63	67	69	67	73	80	72	69	69	Copenhagen
Oslo	86	82	80	73	70	67	70	69	70	81	76	87	85	Oslo
Stockholm	81	80	71	51	57	47	63	65	67	81	76	82	80	Stockholm
Berlin	91	89	85	71	71	57	70	58	74	79	81	88	89	Berlin
Munich	78	72	76	71	72	58	66	67	72	75	78	83	76	Munich
Lodz	88	87	89	74	78	74	86	78	84	84	88	89	89	Lodz
Le Caire	78	74	66	65	54	51	56	63	67	70	73	74	76	Cairo
Alexandrie	77	68	70	73	67	71	75	79	74	73	75	77	68	Alexandria
Rio de Janeiro	76	78	80	82	80	81	78	76	75	78	—	—	—	Rio de Janeiro
	Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.	
Paris	87	82	74	69	72	61	74	77	76	79	83	83	Paris
Strasbourg	84	77	77	74	68	61	70	78	80	84	87	85	Strasburg
Bruxelles	97	80	81	79	77	74	82	86	87	87	92	90	Brussels
Amsterdam	92	87	86	81	75	71	72	77	81	85	89	91	Amsterdam
Genève	83	74	72	72	72	65	72	73	73	79	83	81	Geneva
Gênes	55	64	53	63	60	61	66	60	63	60	58	63	Genoa
Milan	82	82	60	68	63	58	63	59	68	74	83	76	Milan
Venise	86	88	80	84	89	82	78	74	74	76	80	77	Venice
Budapest	84	75	68	65	66	64	70	68	74	71	83	80	Budapest
Cracovie	82	74	78	65	70	71	76	78	77	81	86	86	Cracow
Prague	78	76	77	67	64	59	70	73	73	80	83	77	Prague
New-York	73	77	70	64	67	70	75	76	77	72	68	72	New York
Buenos-Aires	66	73	75	84	86	86	91	89	87	87	85	79	Buenos Aires
Santiago (Chili)	48	58	65	67	75	74	81	74	80	70	64	51	Santiago (Chile)

RENSEIGNEMENTS MÉTÉOROLOGIQUES POUR CERTAINES GRANDES VILLES
METEOROLOGICAL REPORTS FOR CERTAIN LARGE CITIES

(Suite — Continued.)

EAU TOMBÉE, EN MILLIMETRES. — RAINFALL, IN MILLIMETERS

Villes	1925 — Période de quatre semaines se terminant le: — Four-week period ending:												Cities
	24 Janv. Jan.	21 Fév. Feb.	21 Mars March	18 Avril April	16 Mai May	13 Juin June	11 Juill. July	8 Août Aug.	5 Sept. Sept.	3 Oct. Oct.	31 Oct. Oct.	28 Nov. Nov.	26 Déc. Dec.	
Londres	41	60	46	32	38	21	14	98	49	45	61	35	40	London
Glasgow	109	93	25	124	87	96	10	69	58	75	79	15	59	Glasgow
Birmingham	65	55	49	47	62	33	16	102	55	87	95	36	53	Birmingham
Bristol	106	81	48	42	57	73	35	88	43	77	85	41	77	Bristol
Manchester	46	133	41	68	67	87	7	76	76	97	109	52	58	Manchester
Dublin	72	85	41	50	52	84	12	66	18	56	62	62	36	Dublin
Belfast	60	20	58	107	72	111	8	112	30	86	88	55	28	Belfast
Copenhague	30.4	28.2	10.5	31.8	15.9	14.9	24.1	50.5	97.4	51.6	56.2	27.1	27.5	Copenhagen
Oslo	34.8	38.7	17.5	42.3	48.0	57.2	74.7	56.5	50.8	66.2	77.6	48.8	40.1	Oslo
Stockholm	43.3	43.1	29.9	30.4	61.0	21.8	119.6	66.9	11.7	74.4	79.5	38.1	34.3	Stockholm
Berlin	49.3	47.7	32.1	16.7	32.8	13.9	53.2	57.2	64.8	84.2	32.1	41.0	27.6	Berlin
Munich	10.2	29.6	48.6	47.0	91.8	34.0	220.9	72.3	123.3	84.9	40.1	40.3	43.3	Munich
Lodz	34.6	26.5	37.5	19.2	34.3	22.7	207.1	149.3	85.8	24.7	56.6	33.5	24.2	Lodz
Le Caire	10.1	0.0	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	3.7	1.4	Cairo
Alexandrie	102.7	12.0	15.3	4.4	0.0	0.0	0.0	0.0	0.0	0.0	2.3	19.5	27.0	Alexandria
Rio de Janeiro	159.4	94.8	87.3	42.9	96.7	122.2	15.8	25.3	17.4	103.1	—	—	—	Rio de Janeiro
Yokohama	—	—	—	—	99.2†	38.1	182.0	144.3	617.6	389.3	101.6	88.8	59.4	Yokohama
Nagasaki	—	—	—	—	277.1†	28.6	171.9	74.3	88.8*	516.2	13.6	160.6	99.4	Nagasaki
	Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.		
Paris	28.6	69.5	58.4	53.2	54.3	27.2	101.5	98.0	17.7	62.2	69.6	89 9		Paris
Strasbourg	33.1	38.6	43.2	61.4	76.1	14.8	78.2	80.6	119.1	36.0	44.4	78.3		Strasburg
Toulon	27.2	26.7	148.8	69.2	35.8	0.0	13.8	7.9	23.1	71.5	67.8	62.2		Toulon
Bruxelles	128.7	98.6	63.5	77.2	70.1	53.3	94.2	108.8	97.2	78.9	122.1	121.8		Brussels
Amsterdam	56.7	57.0	39.5	49.0	104.7	39.5	58.9	64.4	154.4	77.1	74.3	123.9		Amsterdam
Genève	21.6	82.3	8.8	47.4	86.5	27.7	72.1	119.8	103.3	29.4	56.1	102.9		Geneva
Gênes	5.1	14.7	11.4	6.6	3.2	8.3	11.7	14.8	3.3	5.6	7.6	11.9		Genoa
Milan	10.9	94.7	84.0	98.5	66.6	33.8	37.7	70.5	49.6	52.1	52.8	51.7		Milan
Venise	15.8	56.6	66.0	78.4	103.2	117.3	24.0	119.6	38.0	15.0	121.4	25.6		Venice
Budapest	6.3	38.8	39.8	49.6	68.2	68.8	112.6	64.3	53.3	23.4	90.8	41.2		Budapest
Cracovie	36.2	12.0	34.6	27.0	50.7	291.4	116.3	144.2	53.0	45.3	87.1	34.8		Cracow
Prague	8.9	9.1	30.2	24.4	71.9	24.1	85.6	119.4	20.3	41.3	28.1	24.4		Prague
New-York	134.6	48.5	82.6	43.9	61.7	58.7	153.7	41.7	47.5	104.9	65.0	84.6		New York
Buenos-Aires	161.8	60.2	143.1	70.9	126.8	15.2	39.9	38.6	180.1	89.5	105.5	215.1		Buenos Aires
Santiago (Chili)	0.0	0.2	0.0	2.3	24.5	8.5	72.2	1.5	138.5	10.8	0.5	0.0		Santiago (Chile)

† Trois semaines seulement. — Three weeks only.
* Deux semaines seulement. — Two weeks only.

TAUX DE MORTALITÉ DANS LES GRANDES VILLES, PAR PÉRIODES DE QUATRES SEMAINES.

(Calculés comme taux annuels.)

GENERAL MORTALITY RATES, BY FOUR-WEEK PERIODS. (On Annual Basis.)

Villes	Habitants (milliers) Inhabitants (thousands)	Moyenne annuelle Annual Average		1925													Cities
				Période de quatre semaines se terminant le: — Four-week period ending:													
		1924	1925	24 Janv. Jan.	21 Févr. Feb.	21 Mars Mar.	18 Avril April	16 Mai May	13 Juin June	11 Juil. July	8 Août Aug.	5 Sept. Sept.	3 Oct. Oct.	31 Oct. Oct.	28 Nov. Nov.	26 Déc. Dec.	
105 villes angl.*	19359	12.2	12.2	14.2	14.8	15.0	14.1	12.1	13.2	9.6	9.3	9.3	10.4	10.6	12.5	16.1	105 English Cit.*
Londres *	4577	12.2	11.6	14.2	14.7	13.9	12.2	10.6	9.7	8.8	8.9	8.8	9.9	10.7	12.1	16.9	London *
Birmingham *	947	11.7	11.5	11.5	12.3	15.0	20.5	12.5	10.1	9.2	9.0	9.0	10.1	9.7	11.0	14.8	Birmingham *
Liverpool *	852	13.4	13.6	14.4	16.4	19.1	16.9	14.6	12.4	10.4	9.7	10.4	11.3	11.1	13.2	17.5	Liverpool *
Manchester *	755	14.0	14.1	16.9	17.8	16.7	15.2	14.2	12.6	11.0	10.2	10.9	12.0	12.0	14.9	18.9	Manchester *
Sheffield *	525	11.6	11.4	11.9	13.2	12.7	13.0	12.3	10.7	9.3	9.1	8.4	9.3	10.6	12.9	16.9	Sheffield *
Leeds*	472	14.3	12.5	13.5	15.4	14.6	13.7	11.9	10.2	9.7	10.1	10.2	11.5	9.8	14.6	17.0	Leeds*
Bristol*	386	12.2	13.2	13.9	13.4	15.9	21.8	15.6	12.3	9.5	9.8	8.6	10.9	10.4	12.4	17.1	Bristol*
16 villes écoss. †	2415	15.3	14.4	16.6	15.8	15.9	12.4	14.0	12.6	11.7	11.4	11.2	11.4	15.3	10.7	18.7	16 Scottish Cit. †
Glasgow †	1057	16.1	14.8	16.3	15.6	15.5	14.9	14.2	12.8	12.1	11.5	11.6	12.0	13.1	17.6	20.7	Glasgow †
Edimbourg †	427	14.8	14.5	16.4	17.1	17.9	14.8	14.0	12.8	12.2	11.1	11.6	12.2	15.9	15.0	17.8	Edinburgh †
Dublin *	438	16.4	15.2	16.0	19.3	17.9	17.6	15.6	14.6	12.6	12.9	14.6	13.3	12.5	14.8	16.3	Dublin *
Belfast *	438	14.2	14.0	17.2	18.9	16.4	14.7	13.7	12.1	11.2	10.3	12.1	10.1	11.6	13.4	21.2	Belfast *
Oslo	259	10.6	10.6	11.8	11.7	12.6	11.3	10.5	10.9	9.0	8.9	8.7	9.3	10.9	11.0	11.8	Oslo
Bergen	91	12.4	12.2	11.9	15.8	15.5	11.7	12.3	12.9	11.1	12.9	12.5	8.9	9.1	12.3	12.7	Bergen
Stockholm	439	10.9	11.3	11.6	12.1	11.1	13.3	12.7	12.9	10.7	11.3	8.3	10.0	11.1	10.0	11.8	Stockholm
Gothenbourg	230	9.9	9.7	9.6	11.2	10.7	17.1	10.4	10.7	10.6	8.5	6.9	8.7	8.1	7.4	7.9	Gothenburg
Copenhague *	587	11.9	10.6	10.3	11.0	11.8	12.8	13.5	11.5	9.7	10.0	7.9	8.8	9.0	10.7	10.5	Copenhagen *
Lille *	201	15.9	16.2	16.2	16.6	18.6	19.8	16.2	16.3	14.1	12 5	14.1	13.9	15.9	15.4	21.5	Lille *
Anvers	300	10.5	10.5	9.5	11.3	13.2	13.2	10.0	10.5	8.5	9.1	8.4	8.9	9.9	11.2	13.4	Antwerp
Amsterdam	714	8.9	9.0	10.7	9.5	10.1	9.8	8.9	8.7	8.4	7.8	6.9	8.3	8.1	9.0	11.5	Amsterdam
Rotterdam	546	8.3	8.3	7.8	8.6	9.5	9.5	8.0	8.5	7.3	7.9	6.1	7.6	8.3	7.9	10.7	Rotterdam
La Haye	392	9.1	9.1	8.8	9.3	9.6	8.7	9.1	9.0	8.2	7.8	8.1	8.2	8.6	9.3	13.6	The Hague
46 villes allem. *	16967	10.9	10.4	11.2	11.6	11.2	12.0	10.7	9.9	9.2	9.6	9.2	9.5	10.1	10.5	11.4	46 Germ. Cities *
Berlin *	4120	11.4	10.7	11.5	11.6	11.7	12.7	10.9	10.4	9.2	10.1	9.2	9.9	10.7	10.8	11.3	Berlin *
Hambourg *	1105	10.7	10.3	12.1	10.4	9.8	12.4	11.0	10.0	9.4	9.4	8.4	9.4	9.9	10.5	11.1	Hamburg *
Cologne *	723	10.2	10.1	10.7	10.4	11.3	11.1	9.9	9.4	8.9	9.3	9.0	8.8	9.4	10.9	12.1	Cologne *
Munich *	685	11.5	11.8	13.5	12.1	13.1	14.7	12.6	10.7	11.3	10.1	9.9	10.0	12.1	11.7	11.6	Munich *
Leipzig *	688	10.2	10.2	11.7	10.0	11.0	11.0	10.8	9.4	9.4	9.1	9.0	10.0	9.7	10.6	11.5	Leipzig *
Dresde *	615	10.9	10.3	11.0	11.4	10.7	11.6	10.3	9.3	9.4	9.1	8.5	9.3	10.2	10.6	12.0	Dresden *
Breslau *	574	12.0	11.0	12.2	11.2	11.4	13.9	11.6	10.3	10.0	10.5	9.3	10.0	10.5	10.1	12.4	Breslau *
Essen *	476	9.5	9.5	10.1	9.9	11.2	10.1	10.3	8.4	8.6	9.3	8.9	8.7	9.1	9.2	10.6	Essen *
Francfort s/M. *	472	8.4	8.3	8.9	8.5	9.0	9.4	7.6	7.9	7.3	6.7	7.2	7.8	8.2	9.2	10.3	Frankfort on M.*
Dusseldorf *	430	9.2	9.2	9.9	8.6	10.4	10.2	9.0	9.1	8.0	9.1	8.7	8.7	8.4	9.5	10.3	Dusseldorf *
Hanovre *	425	10.0	10.2	10.3	11.3	10.9	10.6	11.4	9.2	9.0	8.4	10.3	8.2	11.3	10.2	10.9	Hanover *
Nuremberg *	403	9.7	9.6	10.3	10.3	9.7	9.2	10.1	9.5	10.1	9.1	9.1	8.6	9.2	9.4	9.9	Nuremberg *
Königsberg *	274	12.1	12.1	12.7	11.9	12.4	13.7	12.3	11.6	11.7	9.7	11.6	10.1	11.9	12.6	15.8	Königsberg *
Dantzig *	210	12.9	11.6	13.5	14.0	14.2	12.2	9.6	12.0	9.1	10.1	9.7	12.2	10.0	10.8	12.8	Danzig *
Leningrad	1071	18.6	18.9	18.5	17.0	17.7	19.1	19.9	20.5	20.1	21.6	19.4	17.4	17.2	16.9	17.2	Leningrad
Varsovie	993	14.7	14.5	15.1	14.3	14.6	15.9	15.0	13.2	16.5	12.6	16.7	13.6	12.7	13.8	15.1	Warsaw
Cracovie *	187	15.9	12.9	13.1	15.2	13.0	13.0	12.8	10.8	11.9	9.7	12.8	13.2	13.5	14.0	14.8	Cracow *
Sofia	154	—	21.8	17.5	18.9	23.2	40.1	24.7	21.2	18.9	20.7	21.9	17.8	16.4	20.3	21.3	Sofia
Budapest *	958	16.2	15.6	16.0	17.6	18.6	20.6	18.1	15.8	15.6	13.9	14.9	12.2	12.0	12.4	13.9	Budapest *
26 villes suisses *	1117	10.4	10.0	10.3	11.4	11.3	12.2	10.3	9.6	8.7	8.3	8.4	8.9	9.0	9.7	11.6	26 Swiss Cities *
Zurich *	205	9.9	9.4	9.6	10.6	11.1	10.8	9.9	9.9	7.5	8.2	7.9	8.3	8.3	9.8	10.3	Zurich *
Genève *	127	11.9	12.0	15.0	13.9	13.6	15.3	11.1	11.3	9.9	10.4	9.2	9.2	9.7	10.2	14.9	Geneva *
Villes du Canal de Suez	176	24.8	26.0	21.6	20.5	21.7	23.4	28.6	31.1	32.7	36.3	32.6	23.3	23.0	20.9	22.2	Cities of the Suez Canal
de Bsse Egypte	283	26.6	30.1	21.8	21.3	21.6	26.0	30.5	41.7	44.0	42.4	36.2	27.1	25.6	23.7	29.4	Lower Egypt
» Hte Egypte	256	39.1	42.8	29.7	29.7	37.7	45.5	50.3	50.7	54.1	52.6	46.5	41.6	40.7	39.4	38.3	Upper Egypt
Caire	819	33.8	37.2	26.7	30.9	35.7	33.8	43.0	49.6	54.3	52.8	42.6	29.1	26.2	28.6	29.9	Cairo
Alexandrie	487	29.1	36.0	26.0	30.3	24.4	23.3	26.4	32.0	39.4	49.2	48.5	44.7	38.3	40.3	45.0	Alexandria
Johannesbourg	163	11.3	10.5	9.2	10.4	8.6	9.4	9.4	10.7	12.5	12.0	9.1	11.2	11.2	11.3	11.7	Johannesburg
Le Cap	112	11.1	11.6	12.7	11.4	12.1	11.5	11.7	11.4	13.7	11.2	11.3	12.6	12.0	9.9	9.1	Cape Town
109 vill. d. Indes	7292	34.8	31.6	32.0	31.0	33.4	35.8	36.4	32.4	27.6	27.9	32.7	31.1	29.3	29.2	32.0	109 Indian Cities
Bombay	1259	32.3	25.3	28.8	29.6	28.7	27.9	27.7	23.4	22.3	23.2	25.6	23.8	24.8	22.4	21.4	Bombay
Calcutta	1077	29.4	32.3	34.5	37.8	47.4	42.9	36.6	25.7	22.5	25.1	27.6	27.8	28.8	32.3	33.8	Calcutta
Madras	527	42.3	46.2	46.0	47.7	45.8	46.1	50.2	44.3	38.2	38.8	48.8	44.2	46.0	46.5	58.1	Madras
Rangoun	346	34.3	35.3	32.9	33.2	40.6	41.8	40.6	33.8	37.4	37.5	35.4	31.8	31.5	30.3	32.1	Rangoon
Karatchi	222	31.1	27.0	29.5	33.8	29.7	27.6	24.3	26.1	24.7	24.4	27.4	24.8	23.1	23.3	31.9	Karachi
Colombo	256	—	—	—	—	—	—	27.6	30.8	34.6	30.5	29.9	29.0	27.4	27.4	29.6	Colombo

* Etrangers non compris. — Excluding non-residents.

† Les décès des étrangers sont exclus et ceux des résidents décédés dans d'autres localités en Ecosse sont inclus.— Deaths of non-residents are excluded and deaths of residents elsewhere in Scotland are included.

TAUX DE MORTALITÉ DANS LES GRANDES VILLES, PAR PÉRIODES DE QUATRE SEMAINES

(Calculés comme taux annuels) (*suite*).

GENERAL MORTALITY RATES, BY FOUR-WEEK PERIODS (On Annual Basis (*continued*))

Villes	Habitants (milliers) Inhabitants (thousands)	Moyenne annuelle Yearly Average		1925												Cities
				Période de quatre semaines se terminant le: — Four-week period ending:												
		1924	1925	24 Jan. Jan.	21 Fév. Feb.	21 Mars Mar.	18 Avril April	16 Mai May	13 Juin June	11 Juill. July	8 Août Aug.	5 Sept. Sept.	3 Oct. Oct.	31 Oct. Oct.	28 Nov. Nov.	26 Déc. Dec.	
Singapour*	458	26.1	26.9	22.6	22.6	21.9	25.3	28.5	28.8	26.6	26.6	29.0	29.8	31.1	28.7	28.7	Singapore*
Bangkok	452	—	—	26.7	26.1	25.1	26.6	26.4	25.9	25.7	24.3	21.9	21.1	21.9	28.1	29.1	Bangkok
Batavia	290	—	—	—	—	—	37.3	37.6	37.0	37.7	35.3	38.3	38.1	35.5	41,9	37.4	Batavia
Sourabaya	260	—	—	—	—	—	—	25.6	25.2	25.5	26.3	25.6	25.8	24.9	29.0	29.4	Surabaya
Changhaï [1]	842	11.2	11.2	9.2	10.2	10.7	9.6	10.6	9.5	9.9	11.7	12.5	10.5	10.7	10.9	11.4	Shanghai [1]
Hong-Kong	787	—	—	—	—	17.7	18.3	20.7	20.0	21.3	25.3	23.6	19.9	17.8	17.3	16.1	Hongkong
Osaka	2104	—	—	—	—	—	—	—	19.8	18.9	21.1	20.6	20.4	18.9	16.8	18.3	Osaka
Kobé	802	—	—	—	—	—	—	—	17.4	16.6	17.2	14.7	16.0	15.5	14.8	18.7	Kobe
Yokohama	377	—	—	—	—	—	—	—	18.9	21.5	20.7	22.7	18.6	19.3	18.0	18.8	Yokohama
Nagasaki	270	—	—	—	—	—	—	—	14.9	10.8	12.6	10.4	10.8	12.6	11.8	13.3	Nagasaki
Perth(Australie.)	176	11.2	10.2	9.4	8.6	9.5	8.7	8.5	11.4	10.8	9.6	11.5	12.8	10.4	9.7	9.2	Perth (Austral.)
66 v. Etats-Unis	29087	12.6	12.6	14.7	14.3	14.6	14.5	13.6	13.6	11.1	10.6	10.9	10.9	11.9	12.4	12.7	66 cities of U.S.
New-York	5928	11.7	11.5	13.8	13.8	13.2	13.3	13.3	13.8	9.8	9.5	9.6	9.5	11.1	11.4	11.2	New York
Chicago	2886	11.2	11.4	13.1	12.9	13.7	13.3	12.4	12.0	9.9	9.6	9.8	9.5	10.3	11.1	11.5	Chicago
Philadelphie	1923	12.9	13.2	15.7	16.1	14.3	14.1	13.9	16.1	10.8	9.7	10.9	11.1	12.7	11.9	14.1	Philadelphia
Cleveland	889	10.1	10.4	10.9	11.1	12.2	11.7	11.2	10.8	9.1	8.0	9.3	10.1	9.5	10.8	10.4	Cleveland
St-Louis	804	13.4	14.0	16.0	14.6	15.6	16.6	13.7	13.1	12.5	12.5	14.0	12.2	12.4	14.3	14.2	St. Louis
Baltimore	774	14.3	14.6	17.9	17.1	17.4	16.0	15.8	17.0	11.8	12.6	11.3	12.2	13.4	13.7	13.8	Baltimore
Boston	770	14.0	14.7	16.7	18.1	18.2	17.2	15.2	15.2	11.9	11.8	12.2	11.7	13.6	14.7	14.8	Boston
Pittsbourg	613	15.1	14.9	17.4	16.9	19.9	16.9	16.0	15.0	10.9	12.2	13.3	13.2	13.1	14.9	14.2	Pittsburg
San-Francisco	539	13.5	13.1	15.7	14.0	13.0	15.0	13.7	12.7	12.3	11.0	11.3	11.9	12.5	12.8	13.9	San Francisco
Buffalo	537	12.5	13.4	13.0	12.6	15.2	15.1	15.5	14.0	13.0	10.5	13.8	12.3	13.4	14.1	13.5	Buffalo
Nouv.-Orléans	405	18.5	19.2	21.0	23.4	20.4	19.1	18.8	19.0	19.6	17.9	18.9	17.2	17.5	17.9	19.0	New Orleans
Rio-de-Janeiro	1442	16.0	—	18.3	16.9	16.2	16.0	17.1	16.8	17.0	16.8	16.7	16.7	—	—	—	Rio de Janeiro
Bahia	320	—	16.3	14.5	16.9	17.1	15.9	19.2	16.3	16.7	17.4	15.9	13.3	15.6	15.0	18.1	Bahia
Java et Madoura	372	18.8	19.9	20.8	21.3	19.6	18.5	19.3	19.4	19.3	20.1	19.9	19.5	19.5	20.0	21.2	Java and Madura
				Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.		
Paris *	2906	14.3	14.7	17.1	17.1	17.8	15.9	15.0	13.2	12.3	11.1	12.0	13.0	13.9	18.1		Paris *
La Havane	433	18.9	19.7	20.4	17.7	18.9	19.4	19.1	25.9	24.3	21.7	20.1	17.3	19.5	18.8		Havana
Prague *	713	10.9	11.8	12.2	11.3	14.8	14.4	11.7	10.6	10.8	9.5	10.3	11.1	11.4	13.3		Prague *
Tallin (Reval)	122	13.2	12.0	13.3	14.3	12.6	15.2	14.2	8.9	10.4	9.6	10.1	11.4	11.4	12.5		Tallin (Reval)
14 villes hollan.*	2482	8.8	9.1	9.6	10.0	9.9	9.8	9.1	7.8	8.0	7.1	7.8	8.3	9.3	11.9		14 Dutch Cities*
Bruxelles *	808	9.7	10.2	13.0	9.5	12.2	10.4	9.7	8.4	8.5	8.2	8.9	9.9	10.5	13.2		Brussels *
Strasbourg *	167	16.6	13.1	14.4	15.3	14.2	13.0	11.4	12.7	12.5	11.1	10.5	12.4	12.2	17.5		Strasburg *
49 villes espagn.	4205	21.3	23.4	25.8	26.7	25.5	22.3	19.2	19.8	20.8	19.5	18.5	18.1	20.6	24.0		49 Spanish Cities
Madrid	783	19.6	19.7	25.2	25.5	22.8	19.3	16.2	17.0	19.6	16.7	14.8	16.0	18.8	25.0		Madrid
Barcelone	738	20.8	20.2	27.2	25.3	25.4	21.2	17.9	18.9	17.2	15.6	15.2	16.5	17.2	25.3		Barcelona
Valence	260	20.5	21.0	25.1	25.7	28.0	24.6	20.2	20.9	18.5	16.1	13.6	15.2	18.7	25.4		Valencia
Séville	211	25.2	24.9	28.0	32.2	26.2	25.5	24.7	26.8	25.7	20.8	21.5	21.7	23.1	22.7		Seville
Milan *	855	13.4	14.0	16.2	15.1	16.6	13.9	13.2	12.6	12.6	11.8	11.3	13.2	16.0	18.1		Milan *
Gênes *	332	13.8	14.3	13.4	13.9	17.0	14.8	12.8	13.8	13.2	12.2	12.8	12.4	14.1	21.3		Genoa *
Trieste	239	17.0	15.3	18.7	16.8	19.2	16.6	14.3	13.6	12.0	13.1	13.9	14.0	13.5	18.1		Trieste
Bologne *	217	14.0	13.6	16.2	15.9	16.0	14.8	12.7	10.0	11.0	10.2	10.2	13.3	14.4	18.4		Bologna *
Vienne *	1868	12.7	12.3	13.6	13.3	13.3	13.3	11.3	11.0	10.7	9.6	11.4	11.4	12.9	15.7		Vienna *
Moscou	1710	15.8	14.7	17.7	15.5	15.0	14.6	14.8	14.6	15.2	13.2	12.4	14.0	14.4	14.4		Moscow
Ville de Mexico	662	—	31.0	35.5	34.7	41.2	43.9	38.1	29.4	26.2	25.8	25.1	22.5	23.7	26.2		Mexico City
22 villes du Guatémala	415	—	32.0	27.9	29.0	30.2	35.8	40.6	42.6	35.6	29.0	25.8	23.3	—	—		22 cities of Guatemala
Buenos-Aires	1851	13.9	13.7	13.2	13.7	12.5	12.1	12.6	15.4	14.8	15.6	13.8	13.0	15.1	13.1		Buenos Aires
Santiago (Chili)	548	30.9	28.4	29.5	28.0	23.3	21.5	22.5	28.2	26.3	23.5	24.6	29.6	32.2	33.0		Santiago (Chile)
Valparaiso	187	30.2	28.5	29.8	27.5	26.6	26.6	24.9	24.8	24.8	26.6	27.5	32.4	31.9	31.5		Valparaiso
Sydney	1012	9.4	9.4	8.9	7.8	9.0	8.3	9.4	10.0	11.7	11.5	9.4	9.5	8.6	9.1		Sydney
Brisbane	236	9.3	10.3	10.3	9.8	8.8	9.1	9.5	10.2	11.3	11.8	10.8	10.8	8.9	12.5		Brisbane
Auckland	173	9.3	9.2	8.8	7.4	8.0	8.2	9.0	11.0	11.8	9.8	11.4	7.7	8.0	9.2		Auckland
Delhi	247	—	29.4	24.8	28.6	31.2	35.5	38.0	26.0	22.1	32.8	31.9	26.2	27.8	27.6		Delhi

* Etrangers non compris . — Excluding non-residents.

[1] Concession internationale; population chinoise. — International Settlement; Chinese population.

TAUX DE NATALITÉ DANS LES GRANDES VILLES PAR PÉRIODES DE QUATRE SEMAINES
BIRTH RATES IN LARGE CITIES, BY FOUR-WEEK PERIODS.

(Calculés comme taux annuels. — Calculated on annual basis.)

Villes	Moyenne annuelle Annual Average		1925 Période de quatre semaines se terminant le: — Four-week period ending:														Cities
	1924	1925	24 I	21 II	21 III	18 IV	16 V	13 VI	11 VII	8 VIII	5 IX	3 X	31 X	28 XI	26 XII	§ 2 I 1926	
105 villes angl.	19.4	19.3	19.7	18.8	19.6	18.9	20.9	19.7	20.5	19.2	19.5	18.3	18.5	17.7	16.0	20.1	105 English Cit.
Londres	18 6	18 9	19.5	18.8	19.7	18.3	20.3	18.9	19.7	19.0	18.8	17.8	17.7	17.2	15.3	19.5	London
Birmingham	19.4	19.2	18.8	18.7	18.6	19.0	22.9	19.8	20.6	19.8	20.0	19.5	19.0	18.2	15.7	20.8	Birmingham
Liverpool	24.1	22.9	23.3	22.5	22.2	22 2	25.1	23.6	25.2	22.9	23.7	21.5	23.3	22.7	19.8	25.0	Liverpool
16 villes écoss.	22.7	22.6	22.1	22.0	22 6	23.2	25.1	25.0	24.1	22.2	21.5	21.3	22.3	21.5	21 4	23.0	16 Scottish Cit.
Glasgow	24.1	24.8	23.6	23.8	24.4	25.3	26.0	26.3	26.5	24.4	22.9	22.7	23.8	23.6	23.0	24.7	Glasgow
Edimbourg	19.7	19.2	18.4	17.5	19.5	20.4	20.6	19.2	21.0	20.1	18.4	18.5	19.5	19.4	18.3	18.5	Edinburgh
Belfast	24.0	23.6	24.6	23 1	22.9	23.3	26.5	24.9	24.3	21.5	22.1	24.4	22.4	20.7	19.6	27.7	Belfast
Dublin	25.6	17.3	26.3	23.6	26.3	24.7	23.6	28.1	26.8	23.7	25.8	24.2	22 6	21.7	18.0	28.6	Dublin
Stockholm	12.8	12.2	12.2	10.7	11.3	12.8	12.4	14.1	12.4	12.5	11.6	12.9	12.6	11.2	11.9	14.1	Stockholm
Oslo	15.1	13.6	13.3	13.9	14.6	16.9	13.8	12.2	12.3	12 5	12.5	13.9	11.5	13 7	11.9	15.3	Oslo
Copenhague	18.6	18.3	18.8	18.6	19.1	18.7	19.7	18.1	18.0	17.5	16 8	17.3	16.4	18.1	16.7	20.1	Copenhagen
46 villes allem.	14.9	15.9	16.2	16.2	17.6	17.1	17.0	16.9	16.0	15.3	14.6	15.2	14.7	14.4	13.2	16.5	46 German Cities
Berlin	10.1	11.6	11.8	12.2	13.0	12.5	12.4	12.4	11.3	10.8	10.0	10.5	10.5	10.6	9.8	12.7	Berlin
Hambourg	13.7	14.5	15.6	13 7	16 3	14.9	16.0	16.3	14.3	13.6	13.2	13.6	13.5	11.9	12.6	13.8	Hamburg
Cologne	18.0	18.7	19.0	19.2	20.4	18.5	20.5	19.2	19.9	17.2	17.0	16.6	17.1	17.7	17.3	15.6	Cologne
Dresde	12.6	14.7	14.9	16.2	16.6	15.4	16.3	14.2	15.2	14.1	13.0	13.4	12.4	13.1	12.7	14.6	Dresden
Munich	13.5	14 9	13.5	14.6	15.5	16.6	15.1	16.8	16.2	14.9	13.6	13.8	13.0	13.4	13.1	15.5	Munish
Amsterdam	20.3	18.8	20.2	19.7	20.1	19.7	19.6	19.8	16.6	19.6	18.9	18.5	17.1	17.7	17.5	21.0	Amsterdam
La Haye	20.7	18.6	19.4	19.1	19.4	18.7	18.5	19.2	17.5	18.3	18.0	19.0	17.3	19.3	18.6	18.4	The Hague
Anvers	17.7	17.1	15.4	18.2	18.6	18.8	17.5	18.3	17.1	18.3	14.5	16 6	17 4	16 2	16 8	—	Antwerp
26 villes suisses	6.4	12.8	12.0	13.6	13.1	13.7	13.6	13.5	13.1	12.9	12.6	12.8	11.5	10.8	10.9	10.0	26 Swiss Cities
Lille	21.3	21.5	21.5	21.3	21.2	22.6	22.5	21.8	22.4	19.9	21.1	20.9	20.5	20.2	19.8	23.4	Lille
Cracovie	25.7	28.5	24.9	31.7	29.0	31.0	32.1	31.3	31.2	28.0	24.9	26.3	24.1	25.6	25.9	27.9	Cracow
Varsovie	20.8	21.7	19.5	21.6	19.5	30.6	21 0	24.5	22.2	17.9	20.8	20.0	19.5	17.5	23.3	41.8	Warsaw
Villes du Canal de Suez	46.9	45.5	49.1	48.4	44.3	41.7	42.8	38.8	40.4	45.6	46.1	45.8	49.0	48.7	50.5	—	Cities of the Suez Canal
Basse Egypte	45.9	44.6	48.2	46.5	46.6	44.5	44.0	37.9	37.6	42.8	42.9	41 3	43.9	48.1	55.5	—	Lower Egypt
Haute Egypte	55.8	53.5	50.7	55.9	56.3	57.2	48.1	46.0	50.3	53.1	54.6	52.8	57.8	55.4	57.3	—	Upper Egypt
Alexandrie	47.0	47.6	55.4	54.0	54.8	47.2	44.0	40.1	36.6	39.6	43.5	42.1	46.5	51.4	63.2	—	Alexandrie
Le Caire	50.0	50.5	50.9	51.6	54.6	50.7	46.5	46.4	48.4	48.4	45.6	50.1	49.9	55.0	57.9	—	Cairo
Le Cap	23.2	21.3	23.3	18.0	21.2	21.0	21.2	21.2	20.0	23.3	24.2	21.4	22.2	23.5	18.3	15.0	Cape Town
Johannesbourg	24.7	25.3	28.5	25.6	21.9	26.9	26.6	24.2	23.8	22.5	25.4	26.5	27.2	27.0	23.2	26.2	Johannesburg
New-York	21.7	20.8	21.1	21.2	21.1	21.9	20.1	20.6	*a*21.7	21.0	21.6	19.7	20.1	19.2	—	18.2	New York
Rio-de-Janeiro*	39.3	—	21.0	22.0	22.8	23.9	25.4	23.5	23.2	23.2	23.1	22.5	—	—	—	—	Rio de Janeiro*
Madras	43.1	44.0	38.0	35.1	38.2	41.6	47.2	44.6	42.5	43.2	51.0	51.5	50.1	45.9	45.0	27.7	Madras

Villes	1924	1925	1925 Mois — Months												Cities
			I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Paris	15.9	16.2	17.3	17.5	16.8	16.8	16.8	16.8	16.5	15.7	14.7	15.1	15.0	16.2	Paris
Bruxelles	14.0	13.3	13.3	13.2	14.5	13.9	13.3	13.3	13.6	12.7	12.2	12.6	12.1	12.7	Brussels
14 villes hollan.	21.2	20.6	20.7	21.5	21.6	21.8	21.7	20.3	20.3	20.5	20.5	19.5	19.2	19.9	14 Dutch Cities
Milan	14.7	14.2	13.9	14.8	15.2	13.8	14.9	15.1	14.7	13.7	13.5	13.8	13.3	12.9	Milan
Gênes	16.4	13.4	13.7	14.5	10.7	13.6	12.6	14.6	13.7	12.3	13.1	13.7	14.2	14.4	Genoa
Venise	23.5	22.9	23.3	23.2	23.0	22.6	23.0	22.5	26.1	21.6	23.0	19.6	24.0	22.7	Venice
49 villes espagn.	26.5	27.0	30.6	30.2	29.0	27.2	25.8	25.5	25.8	24.7	25.7	26.0	26.6	26.8	49 Spanish Cit.
Madrid	24.5	24.8	28.4	27.0	25.3	23.6	23 6	23.2	23.9	21.9	23.0	24.4	26.8	25.9	Madrid
Barcelone	24.0	25.5	27.7	27.7	27.2	25.6	23.7	24.2	17.2	25.2	24.9	24.0	24.8	25.8	Barcelona
Valence	24.5	24.2	27.5	28.8	25.5	22.0	22.0	25.3	18.5	22.8	23.0	24.9	24.0	22.1	Valencia
Séville	26.3	27.5	33.4	31.0	29.1	27.3	24.6	25.6	25.7	24.3	22.8	26.1	29.4	29.5	Seville
Budapest	16.7	17.8	16.8	18.8	20.0	19.4	19.4	18.9	16.0	17.0	18.1	17.2	16.2	15.6	Budapest
Prague	17.8	13.6	13.3	15.1	15.2	14.5	15.2	12.8	14.4	12.3	12.3	11.8	12.7	11.4	Prague
Vienne	14.7	13.8	12.0	13.1	15.3	15.5	14.8	16.2	14.2	13.0	13.1	12.4	13.2	12.7	Vienna
Moscou	30.4	—	34.6	33.5	32.9	32.4	31.6	32.3	28.2	27.3	—	—	—	—	Moscow
Bueno-Aires	24.4	24.8	27.0	23.8	26.1	24.4	22.6	24.8	26.8	24.7	26.1	25.0	23.8	22.1	Buenos Aires
Santiago (Chili)	30.8	26.3	39.9	26.8	23.3	9.2	23.3	26.1	26.2	27.3	24.9	29.0	32.7	27.4	Santiago (Chili)
Valparaiso	33.6	32.3	32.5	32.1	29.3	28.6	31.1	31.1	34.1	36.1	31.0	34.6	34.2	33.1	Valparaiso
Delhi	47.8	—	—	41.9	40.0	36.3	37.0	38.9	44.5	52.0	58.9	—	—	—	Delhi

§ Période d'une semaine. — One week period.

* District Fédéral. — Federal District.

a Période de 3 semaines seulement. — Period of three weeks only.

MORTALITÉ INFANTILE DANS LES GRANDES VILLES, PAR PÉRIODES DE QUATRE SEMAINES

INFANT MORTALITY IN LARGE CITIES, BY FOUR-WEEK PERIODS.

Villes	Moyenne annuelle Annual Average		1925 Période de quatre semaines se terminant le: — Four-week period ending:													Cities
	1924	1925	24 I	21 II	21 III	18 IV	16 V	13 VI	11 VII	8 VIII	5 IX	3 X	31 X	28 XI	26 XII	§ 2/I 1926	
105 villes angl.	79	79	89	93	86	88	70	63	52	58	71	81	71	89	115	104	105 Engl. Cities
Londres	69	66	72	79	70	72	53	42	37	45	53	73	69	89	114	78	London
Birmingham	82	75	94	100	91	92	75	49	51	60	82	72	63	58	94	127	Birmingham
Liverpool	103	97	106	104	139	102	100	86	60	67	105	100	68	87	151	154	Liverpool
16 villes écoss.	112	99	126	112	112	107	92	76	68	81	87	81	98	131	133	97	16 Scott. Cities
Glasgow	119	101	125	100	101	100	96	85	66	84	88	82	113	138	143	102	Glasgow
Edimbourg	89	91	116	129	139	93	92	59	55	56	73	76	78	117	97	118	Edinburgh
Belfast	85	108	144	143	122	78	82	82	72	68	125	76	99	92	244	107	Belfast
Dublin	118	112	95	122	116	130	121	80	73	137	168	134	83	82	122	88	Dublin
Stockholm	51	48	61	64	39	67	67	55	19	40	28	37	38	32	28	42	Stockholm
Oslo	47	42	33	61	65	30	29	33	45	40	36	29	35	40	34	39	Oslo
Copenhague	76	67	64	56	82	104	70	61	60	79	41	53	46	56	79	111	Copenhagen
46 villes allem.	101	96	101	103	96	99	90	81	81	101	105	86	96	96	112	109	46 German Cities
Berlin	96	92	93	110	91	102	89	82	84	94	84	79	93	95	91	103	Berlin
Hambourg	86	81	77	85	79	108	89	61	68	83	84	75	71	99	78	86	Hamburg
Cologne	99	100	111	91	99	103	81	82	84	99	109	103	104	110	124	157	Cologne
Dresde	85	80	71	81	74	89	83	72	60	74	93	73	65	95	95	151	Dresden
Munich	129	105	120	133	123	103	116	90	95	110	97	83	74	112	109	103	Munich
La Haye	32	35	34	40	34	28	29	26	38	33	41	35	37	41	38	51	The Hague
26 villes suisses	50	49	41	65	52	56	53	50	47	33	49	45	44	44	57	61	26 Swiss Cities
Lille	94	98	128	106	98	92	66	86	84	72	142	106	95	102	92	111	Lille
Cracovie	131	108	109	128	111	104	85	89	85	107	154	109	133	109	83	170	Cracow
Varsovie	238	160	*a*170	157	171	121	184	139	196	209	185	152	*a*131	163	153	79	Warsaw
Villes du Canal de Suez	132	191	119	101	129	220	226	282	295	300	266	147	145	126	127	—	Cities of the Suez Canal
Basse Egypte	126	208	111	100	103	164	226	370	378	337	283	204	167	125	142	—	Lower Egypt
Haute Egypte	166	303	175	151	222	287	428	448	438	414	331	313	262	230	238	—	Upper Egypt
Alexandrie	232	243	141	155	130	160	205	312	360	425	360	292	225	205	185	—	Alexandria
Le Caire	251	247	145	154	188	221	337	387	418	409	310	178	161	152	145	—	Cairo
Boston*	77	81	112	95	99	92	79	84	59	93	70	88	78	74	68	66	Boston*
Chicago*	79	74	95	93	96	93	83	73	57	64	72	78	66	59	60	85	Chicago*
New-York*	68	64	70	71	72	77	70	74	56	59	61	59	58	58	50	61	New York*
Philadelphie*	75	73	87	79	80	72	72	79	60	57	88	81	71	54	70	55	Philadelphia*
Détroit*	84	84	88	95	98	85	91	87	60	68	96	98	76	76	76	79	Detroit*
San-Francisco*	58	50	58	62	62	58	50	52	39	41	55	46	39	50	47	12	San Francisco*
Rio-de-Janeiro**	94	—	231	173	183	180	183	180	172	162	142	178	—	—	—	—	Rio de Janeiro**

Villes	1924	1925	1925 Mois — Months												Cities
			I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Paris	88	89	100	108	105	106	105	80	76	86	76	69	70	84	Paris
Bruxelles	80	82	106	92	84	73	78	53	74	91	58	69	83	63	Brussels
14 villes holland.	38	37	44	39	44	39	34	34	31	29	28	32	40	54	14 Dutch Cities
Milan	87	101	99	84	76	81	83	103	141	188	106	89	79	81	Milan
Gênes	71	112	111	111	106	97	124	120	124	126	109	93	109	108	Genoa
Venise	147	128	159	138	131	118	105	97	145	164	127	141	90	125	Venice
49 villes espagn.	141	138	122	126	132	125	125	162	195	173	129	111	113	138	49 Spanish Cities
Madrid	137	146	135	139	152	135	111	161	238	163	105	84	103	225	Madrid
Barcelone	101	98	147	114	96	91	104	141	169	95	60	61	67	75	Barcelona
Valence	105	112	89	95	127	165	128	142	179	79	61	75	88	155	Valencia
Séville	200	149	100	124	130	154	225	293	222	119	147	113	110	98	Seville
Budapest	155	126	130	151	131	138	97	107	137	133	120	122	134	117	Budapest
Prague	110	111	122	94	131	142	104	115	97	90	107	124	74	126	Prague
Vienne	98	—	124	105	92	84	68	54	74	75	89	—	—	—	Vienna
Moscou	177	—	134	134	134	136	149	160	227	170	—	—	—	—	Moscow
Buenos-Aires	85	86	75	101	78	58	72	66	70	83	72	83	156	119	Buenos Aires

* Les taux pour les villes des Etats-Unis sont basés sur la moyenne hebdomadaire des nés-vivants pendant l'année précédente, les données courantes de la natalité faisant défaut. — The rates for the cities of the United States are based on the average weekly number of living births for the previous year, no current records of the natality being available.

** District Fédéral. — Federal District.

a Période de trois semaines seulement. — Period of three weeks only.

§ Période d'une semaine. — One-week period.

Tableaux de Mortalité par certaines causes dans les grandes villes.

Tables of Mortality from Certain Causes in Large Towns.

AFRIQUE - AFRICA.

ALGER — ALGIERS

(Population: 203 950. R. 1921.)

Source: Compte-rendu des travaux du bureau municipal d'hygiène 1922-1925.

Cause de décès — Cause of Death		Total 1922	Total 1923	Total 1924	Total 1925
Décès, toutes causes	Deaths, all causes	4319	4110	4186	4242
Décès de 0 à 1 an	Deaths up to 1 year	930	858	685	—
Coqueluche	Whooping-cough	5	4	6	7
Diarrhée et Entérite, au-dessous de 2 ans	Diarrhœa and enteritis, under 2 years,	835	720	130	505
Diphtérie	Diphtheria	10	4	11	7
Dysenterie	Dysentery	6	5	3	8
Encéphalite létharg.	Encephalitis letharg.	8	3	9	6
Fièvre typhoïde	Enteric fever	27	19	24	15
Fièvre récurrente	Relapsing fever	1	0	0	0
Fièvre méditerranéenne	Mediterranean fever	0	0	0	0
Grippe	Influenza	107	62	49	43
Infection puerpérale	Puerperal infection	8	6	0	4
Lèpre	Leprosy	1	[illegible]0	0	0
Méningite cérébro-spinale	Cerebro-spinal meningitis	2	2	4	3
Pneumonie	Pneumonia	596	514	571	553
Rougeole	Measles	36	4	1	3
Scarlatine	Scarlet fever	1	2	0	4
Tuberculose pulmon.	Pulmon. tuberculosis	602	672	674	622
Tuberculose, autres formes	Tuberculosis, other forms	192	184	161	161
Typhus exanthém.	Typhus	6	14	14	20
Variole	Smallpox	0	0	0	112

VILLES D'ÉGYPTE — EGYPTIAN TOWNS

Sources: Annual Return of Births, Deaths and Infectious Diseases, 1919–1924.
Weekly Return of Births, Deaths and Infectious Diseases in the Principal Towns of Egypt, 1925.

Période de quatre semaines se terminant le: / Four-week period ending:	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 yr.	Diarrh. et entérite au-dessous d. 5 ans Diarrhœa & enteritis under 5 years	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre typhoïde Enteric fever	Paludisme Malaria	Méningite cérébro-spinale Cerebro-spinal meningitis	Peste Plague	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Septicémie puerpérale Puerperal septicæmia	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms	Typhus exanth. Typhus
Villes du Canal de Suez — Towns of the Suez Canal Zone DAMIETTE, PORT-SAID, ISMAILIA, SUEZ (Population: 176 300. E. 1. juill. 1925)																
Total 1919	6012	1130	1063	11	218	31	81	8	112	282	39	2	20	194	34	52
» 1920	4885	1412	1096	20	95	31	15	2	66	298	51	1	20	172	31	19
» 1921	4422	1215	924	23	46	31	21	3	75	294	6	0	16	168	19	14
» 1922	4669	1490	1163	21	57	45	15	5	69	250	15	0	17	168	19	16
» 1923	4502	1445	1514	10	82	35	14	6	52	259	154	0	17	146	20	2
» 1924	4188	1412	1160	68	39	19	10	1	18	209	2	0	7	179	27	1
» 1925	4621	1494	1322	56	62	15	2	1	21	187	37	0	4	198	35	5
Janvier – January 28	292	79	45	5	3	1	0	0	0	12	0	0	0	18	3	0
Février – February 25	277	66	30	5	3	0	0	0	0	6	0	0	1	12	1	0
Mars – March 25	293	77	61	2	1	1	0	0	0	30	1	0	0	15	2	0
Avril – April 22	316	124	70	6	4	0	0	0	2	18	0	0	0	14	5	0
Mai – May 20	387	131	103	3	5	1	0	0	1	19	3	0	0	19	3	1
Juin – June 17	421	148	149	3	7	0	0	0	2	17	8	0	0	12	5	0
Juillet – July 15	442	161	175	2	7	2	0	0	7	14	6	0	2	14	3	1
Août – August 12	491	185	192	1	8	4	0	0	0	11	6	0	0	19	0	2
Sept. – Sept. 9	441	166	161	5	3	3	1	1	3	14	1	0	0	19	5	0
Octobre – October 6	315	91	107	8	3	1	0	0	3	8	0	0	0	8	2	0
Novem. – Novemb. 4	311	96	87	5	4	2	0	0	2	8	0	0	0	15	2	1
Décemb.– Decemb. 2	282	83	73	5	5	0	1	0	1	9	2	0	1	16	1	0
Décemb.– Decemb. 31	353	87	69	6	9	0	0	0	0	21	10	0	0	17	3	0

VILLES D'ÉGYPTE *(suite)* — EGYPTIAN TOWNS *(continued)*

ALEXANDRIE — ALEXANDRIA (Population: 486 600. E. 1925).

Période de quatre semaines se terminant le : / Four-week period ending	Décès, toutes causes Deaths all causes	Décès de 0 à 1 an Deaths up to 1 yr.	Diarrh. et entérite au-dessous d. 5 ans Diarrhœa & enteritis under 5 years	Diphtérie Diphteria	Dysenterie Dysentery	Fièvre typhoïde Enteric fever	Paludisme Malaria	Méningite cérébro-spinale Cerebro spinal meningitis	Peste Plague	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Septicémie puerpérale Puerperal septicæmia	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms	Typhus exanth. Typhus
Total 1919	18201	3834	3855	25	248	165	8	9	5	577	91	4	58	936	310	750
» 1920	14402	4182	3132	14	147	78	15	4	3	463	21	6	30	750	268	278
» 1921	13050	4112	3225	23	131	75	2	4	46	310	30	11	34	658	264	54
» 1922	12299	4388	2941	21	78	69	7	8	36	274	17	0	58	546	224	34
» 1923	14216	5195	4031	34	93	64	9	3	33	284	176	0	39	498	188	22
» 1924	13892	5202	3523	86	141	77	1	3	2	315	5	6	33	593	158	9
» 1925	17603	5341	5466	56	234	82	1	4	3	394	406	11	24	564	146	5
Janvier – January 28	973	292	163	9	6	7	0	0	0	24	0	0	1	42	7	0
Février – February 25	1134	312	175	8	10	0	0	1	0	34	0	0	2	45	8	0
Mars – March 25	911	266	120	4	9	1	0	1	0	35	0	0	4	47	7	0
Avril – April 22	872	282	151	2	8	3	0	0	0	28	2	0	4	47	16	0
Mai – May 20	988	342	256	2	9	2	0	0	0	30	0	0	0	38	11	2
Juin – June 17	1199	467	368	3	19	2	0	0	0	24	7	0	1	43	13	2
Juillet – July 15	1475	491	538	2	19	4	0	0	1	19	46	1	1	42	9	0
Août – August 12	1841	628	770	3	22	7	0	0	1	33	87	5	3	39	13	0
Sept. – Sept. 9	1815	585	765	3	23	14	0	0	0	33	85	3	1	46	10	0
Octobre – October 6	1673	459	684	6	27	21	0	1	1	25	53	1	2	37	15	0
Nov. – Novemb. 4	1433	391	476	5	30	9	0	0	0	24	42	1	2	44	8	1
Décem. – Decemb. 2	1508	394	490	6	22	7	0	0	0	29	43	0	2	39	15	0
Décem. – Decemb. 31	1781	432	510	3	30	5	1	1	0	56	41	0	1	55	14	0

LE CAIRE — CAIRO (Population: 818 500. E. 1925).

Total 1919	32162	7160	6517	159	854	330	18	26	1	1587	296	3	70	1197	200	2702
» 1920	28462	8674	6884	82	718	226	18	17	0	1377	416	10	68	987	200	838
» 1921	23663	7756	6084	136	540	168	7	6	0	1219	109	4	68	757	131	202
» 1922	26867	9442	7549	174	494	247	4	8	0	1547	371	2	68	774	179	127
» 1923	28287	9702	8955	240	572	283	5	22	2	1385	572	3	48	760	143	78
» 1924	27226	10072	7495	259	467	266	4	7	0	1560	77	1	47	726	177	55
» 1925	30485	9938	9083	312	575	363	7	10	0	1948	712	4	49	778	188	30
Janvier – January 28	1684	465	198	21	24	12	0	1	0	141	1	0	2	46	14	0
Février – February 25	1946	499	219	26	28	26	0	1	0	160	8	1	7	64	9	1
Mars – March 25	2245	644	353	17	28	14	0	1	0	231	22	0	0	64	20	5
Avril – April 22	2127	704	490	18	28	9	1	0	0	180	24	0	5	61	9	4
Mai – May 20	2706	982	834	21	49	18	1	0	0	166	104	0	3	63	11	2
Juin – June 17	3121	1126	1216	30	55	35	1	3	0	167	152	0	5	62	18	8
Juillet – July 15	3416	1271	1527	20	61	45	1	0	0	170	167	2	6	51	13	2
Août – August 12	3323	1243	1475	19	65	40	0	0	0	152	132	0	4	82	12	1
Sept. – Sept. 9	2683	889	1079	28	68	49	1	0	0	125	74	1	3	59	18	0
Octobre – October 7	1835	558	572	25	51	41	0	0	0	71	10	0	4	47	13	2
Novem. – Novemb. 4	1651	503	418	35	35	34	1	1	0	100	8	0	0	65	9	0
Décem. – Decemb. 2	1800	527	395	21	38	30	0	2	0	132	8	0	4	64	16	4
Décem. – Decemb. 31	1948	527	307	31	45	10	1	1	0	153	2	0	6	50	26	1

Villes principales de la Basse-Égypte — Chief Towns of Lower Egypt

BENHA, DAMANHUR, MANSURA, SHIBIN EL KÔM, TANTA, ZAGAZIG

(Population: 283 200. E. 1. VII. 1925.)

Période de quatre semaines se terminant le : / Four-week period ending :	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Bronchite Bronchitis	Diarr. et entér. au-dessous de 5 ans Diarrhœa and enteritis under 5 years	Dysenterie Dysentery	Paludisme Malaria	Pneumonie Pneumonia	Septicémie puerpérale Puerperal septicæmia	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	8279	1849	736	1806	224	6	371	46	232	39
» 1920	8928	2221	795	2262	281	14	370	64	267	35
» 1921	7323	2059	624	1790	179	10	415	51	152	30
» 1922	7647	2371	578	2292	177	3	305	39	162	24
» 1923	7662	2257	665	2543	178	2	315	39	120	32
» 1924	7660	2497	716	2348	155	7	303	34	174	37
» 1925	8634	2526	671	2832	187	6	360	22	148	29
Janvier — January 28	474	116	72	65	6	0	22	0	14	2
Février — February 25	463	101	50	56	4	1	20	1	6	1
Mars — March 25	470	104	57	82	6	0	26	2	19	3
Avril — April 22	565	158	68	131	10	0	31	3	10	2
Mai — May 20	662	216	85	218	12	0	26	2	11	6
Juin — June 17	907	305	53	388	13	1	36	1	13	5
Juillet — July 15	955	309	46	434	24	0	28	3	16	1
Août — August 12	922	313	36	414	33	1	20	2	4	2
Septembre — September 9	887	264	34	352	20	1	27	2	8	0
Octobre — October 6	589	173	24	239	11	1	23	2	11	3
Novembre — November 4	557	159	29	182	20	0	24	1	12	0
Décembre — December 2	515	131	42	123	14	1	26	0	13	1
» — » 31	668	177	75	148	14	0	51	3	11	3

VILLES D'ÉGYPTE *(suite)* — EGYPTIAN TOWNS *(continued)*

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Décès, de 0 à 1 an Deaths, up to 1 year	Bronchite Bronchitis	Diarr. et entér. au-dessous de 5 ans Diarrhœa and enteritis under 5 years	Dysenterie Dysentery	Paludisme Malaria	Pneumonie Pneumonia	Septicémie puerpérale Puerperal septicæmia	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Villes principales de la Haute-Égypte — Chief Towns of Upper Egypt ASYÛT, ASWÂN, BENI SUEF, EL FAÏYÛM, EL GÎZA, EL MINYA, QENA, SOHÂG (Population: 255 500. E. 1. juill. 1925.)										
Total 1919	9235	2804	865	2176	299	5	471	41	203	37
» 1920	11111	3592	1343	2858	280	5	543	43	236	49
» 1921	8623	3176	951	2232	182	7	405	49	151	47
» 1922	9512	3719	1063	2755	166	2	407	41	139	43
» 1923	10391	3894	1121	3077	201	0	446	17	156	35
» 1924	9642	3872	943	2725	193	0	366	31	167	31
» 1925	10978	4066	1182	3412	267	2	546	20	176	51
Janvier — January 28	583	174	72	82	17	0	41	0	15	2
Février — February 25	583	166	106	61	8	0	27	4	14	3
Mars — March 25	739	245	140	123	15	1	41	2	20	8
Avril — April 22	892	322	154	211	27	1	42	1	15	6
Mai — May 20	985	404	100	334	18	0	71	1	19	2
Juin — June 17	993	404	119	415	23	0	48	2	10	5
Juillet — July 15	1060	431	83	438	24	0	44	2	12	2
Août — August 12	1031	431	63	454	16	0	39	1	11	3
Septembre — September 9	911	355	50	345	30	0	31	3	12	6
Octobre — October 6	816	324	46	304	17	0	31	2	15	2
Novembre — November 4	798	297	61	268	15	0	32	1	10	2
Décembre — December 2	772	254	75	209	35	0	44	0	14	5
» — » 31	815	259	113	168	22	0	55	1	9	5

AMÉRIQUE — AMERICA.

VILLES DU BRÉSIL. — BRAZILIAN TOWNS.

BAHIA

(Population: 320 000. E. 31. déc. 1924.)

Source: Boletim Demographo-Sanitario.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Bronchite aiguë Acute Bronchitis	Diarrhée et entérite 0–2 ans Diarrhœa and enteritis 0–2 years	Diphtérie Diphtheria	Dysenterie Dysentery	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Paludisme Malaria	Peste Plague	Pneumonie Pneumonia	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1924	5754	—	555	5	282	12	24	188	118	358	7	—	998	51
Total 1925	5309	106	616	12	12	23	23	29	79	391	18	272	958	53
Janvier — January 24	357	5	45	2	3	3	1	5	8	31	1	13	62	5
Février — February 21	414	5	67	0	6	3	0	5	6	27	2	21	75	2
Mars — March 21	420	6	66	0	5	2	0	2	5	40	1	16	64	2
Avril — April 18	391	9	45	0	4	0	2	7	3	39	3	17	74	3
Mai — May 16	472	7	44	1	6	3	1	1	12	50	5	11	81	4
Juin — June 13	400	10	43	2	8	1	4	3	9	34	1	19	61	5
Juillet — July 11	411	13	44	2	8	2	2	1	7	31	0	16	61	5
Août — August 8	426	7	43	1	7	1	0	1	10	24	0	26	79	3
Septembre — September 5	391	9	34	1	5	1	3	0	5	26	0	32	74	4
Octobre — October 3	325	11	31	1	2	0	2	1	3	16	1	28	63	3
Octobre — October 31	382	7	33	1	7	1	0	0	4	25	1	20	85	4
Novembre — November 28	369	9	28	1	8	4	5	0	3	21	1	21	76	4
Décembre — December 26	444	4	68	0	13	2	1	2	4	21	1	29	89	8
1926 Janvier — January 2*	107	4	25	0	2	0	2	1	0	6	1	3	14	1

	1919	1920	1921	1922	1923
Peste — Plague	2	43	35	21	10

* Une semaine seulement. — One week only.

VILLES DU BRÉSIL *(suite)*. — BRAZILIAN TOWNS *(continued)*.

RECIFE (Pernambuco)

(Population: 320 000. E. 1. janv. 1925.)

Source: Boletin Mensal de Estatistica Demographo-Sanitaria do Estado de Pernambuco.

Mois — Month	Décès, toutes causes Deaths, all causes	Coqueluche Whooping-cough	Diphtérie Diphtheria	Dysenterie Dysentery	Erysipèle Erysipelas	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Lèpre Leprosy	Rougeole Measles	Septicémie puerpér. Puerper. septicæmia	Syphilis	Tuberculose des voies respiratoires Tuberculosis of respiratory organs	Tuberculose, autres formes Tuberculosis, other forms	Variole Smallpox
Total 1925	7392	16	5	24	24	14	322	11	48	36	232	1253	19	99
Janvier—January	557	1	1	6	5	4	19	0	1	4	10	99	1	28
Février—February	517	0	0	1	1	1	14	0	1	0	13	99	2	17
Mars—March	617	0	0	2	2	0	21	2	2	4	22	90	2	16
Avril—April	641	0	2	1	2	0	16	2	2	7	19	118	1	15
Mai—May	546	1	0	2	2	2	37	1	3	3	14	88	3	19
Juin—June	675	1	0	1	2	2	43	2	3	2	25	120	0	3
Juillet—July	658	1	1	5	1	1	43	0	3	4	18	116	3	1
Août—August	594	0	0	0	2	0	23	0	3	3	24	106	2	0
Septembre—Sept.	640	3	1	1	1	2	20	2	2	2	32	96	1	0
Octobre—October	616	1	0	2	3	2	23	1	8	3	14	108	0	0
Novembre—Novemb.	652	5	0	2	1	0	26	0	10	3	18	99	2	0
Décembre—December	679	3	0	1	2	0	37	1	10	1	23	114	2	0

RIO DE JANEIRO

(Population : 1 420 739. E. 31. déc. 1924.)

Sources: Rapport de la "Inspectoria de Démographia Sanitaria", 1919-1924.
Boletim Hebdomadario de Estatistica Demographo-Sanitaria da Cidade do Rio de Janeiro, 1925.

Période de quatre semaines se terminant le : Four-week period ending :	Décès, toutes causes Deaths, all causes	Décès au-dessous d'un an Deaths up to one year	Coqueluche Whooping-cough	Diarrhée et entérite au-dessous de deux ans Diarrhœa and enteritis under two years	Diphtérie Diphtheria	Dysenterie Dysentery	Erysipèle Erysipelas	Fièvre typhoïde Enteric fever	Grippe Influenza	Lèpre Leprosy	Méningite cérébro-spinale Cerebro-spinal meningitis	Paludisme Malaria	Pneumonie Pneumonia	Rougeole Measles	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms	Variole Smallpox
Total 1919	24300	5600	395	3466	108			125	704				320	659	4222	4409	305
» 1920	22154	5203	189	2986	62			128	421				339	65	4433	4608	99
» 1921	23325	5503	45	3523	60			132	777				297	95	4477	4641	49
» 1922	25609	5992	261	3760	94			152	911				349	653	4305	4483	117
» 1923	24344	6088	546	3518	49			131	1079				345	173	3992	4183	40
» 1924	23140	5325	188	3379	60	306	45	115	880	47	43	333	334	145	4305	4483	4
» 1925 *	19845	4562	97	2867	76	314	37	97	748	49	26	239	1660	661	3326	3455	138
Janvier — January 24	2158	538	11	403	5	47	4	14	84	6	1	25	141	48	364	376	0
Février — February 21	1988	425	13	299	3	35	5	8	67	4	2	38	161	28	376	391	0
Mars — March 21	1911	463	6	330	6	41	3	4	85	6	1	22	120	26	319	338	0
Avril — April 18	1882	479	8	308	7	40	2	11	83	3	3	27	123	28	322	336	0
Mai — May 16	2010	519	4	338	7	31	3	16	87	7	2	32	175	29	314	333	1
Juin — June 26	1978	469	9	268	7	34	2	13	78	6	1	28	223	46	305	314	3
Juillet — July 11	2000	443	7	231	7	18	3	10	83	5	1	19	208	69	334	342	6
Août — August 8	1979	417	9	222	15	9	5	7	57	3	4	19	181	119	353	353	22
Septembre — September 5	1971	365	17	199	11	21	5	11	64	4	5	15	166	153	323	341	49
Octobre — October 3	1968	444	13	269	8	38	5	13	60	5	6	14	162	115	316	331	57

* Année incomplète. — Incomplete year.

VILLES DU BRÉSIL *(suite)*. — BRAZILIAN TOWNS *(continued)*.

SAO PAULO

(Population: 850 000. E. 31.déc.1925).

Sources: Annuario demographico de Estatistica demographo-sanitaria, 1919–1922.
Estatistica demographo-sanitaria del Serviço Sanitario do Estado de São Paulo, 1923–1924.
Boletim Hebdomadario de Estatistica demographo-sanitaria, 1925.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Décès de 0–1 an Deaths up to 1 year	Diarrhée et entérite jusqu'à 2 ans Diarrhoea & enteritis under 2 years	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre puerpérale Puerperal fever	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Lèpre Leprosy	Méningite cérébro-spinale Cerebro spinal meningitis	Pneumonie Pneumonia	Rougeole Measles	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	9985	3051	1425	54	47	58	76	354	28	3	455	102	553	61
» 1920	10565	3473	1700	71	84	51	101	64	42	25	493	80	580	59
» 1921	11252	3575	1637	68	77	71	203	263	53	20	603	54	652	68
» 1922	11473	3902	1767	64	126	74	100	122	37	29	532	130	707	99
» 1923	12292	3805	2586	73	118	57	136	242	37	33	469	141	668	69
» 1924	13158	3896	2723	54	166	83	217	196	42	17	473	68	752	72
† » 1925	13765	4223	3217	49	253	62	459	235	58	30	611	158	827	84
Janvier — January 25	1239	312	280	7	32	9	43	9	4	0	46	8	74	7
Février — February 22	1088	327	265	2	19	5	64	7	3	3	100	2	74	4
Mars — March 22	985	301	228	3	26	5	47	12	5	5	91	3	54	10
Avril — April 19	912	250	188	5	22	5	57	15	7	5	91	3	47	3
Mai — May 17	996	290	189	3	22	7	50	20	2	6	37	4	69	7
Juin — June 14	1026	289	174	4	17	2	40	23	4	2	51	4	61	6
Juillet — July 12	910	220	81	8	5	4	27	31	1	0	66	8	53	12
Août — August 9	814	300	72	5	11	2	18	25	8	4	43	8	72	7
Septembre — September 6	857	255	139	1	12	7	10	23	4	1	47	7	60	6
Octobre — October 4	1148	435	342	1	22	6	19	16	8	1	57	19	67	4
Novembre — November 1	1207	394	361	2	17	7	31	29	4	0	62	31	67	3
Novembre — November 29	1232	420	376	3	26	1	18	13	4	0	53	24	56	7
Décembre — December 27	1327	430	421	5	28	7	30	14	3	3	53	31	70	7
1926 Janvier — January 3*	291	87	85	1	3	1	7	2	0	0	6	6	18	2

	1919	1920	1921	1922	1923	1924	1925
Coqueluche — Whooping cough	62	52	31	60	50	99	145
Peste — Plague	1	10	1	1	0	0	1
Scarlatine — Scarlet fever	74	62	17	5	3	2	1

† Total pour l'année du calendrier — Total for calendar year.
* Une semaine seulement. — One week only.

VILLES DES ÉTATS-UNIS — UNITED STATES CITIES

Sources: «Mortality Statistics», Bureau du Recensement, 1919-1924. — "Mortality Statistics", Bureau of the Census, 1919-1924. "Public Health Reports" 1925.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Encéphalite léthargique Encephalitis lethargica	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-sp. Cerebro-sp. meningitis	Pneumonie et broncho-pneumonie Pneumonia and broncho-pneumonia	Poliomyélite aiguë Acute poliomyelit.	Tuberculose, toutes formes Tuberculosis, all forms
BOSTON (Population: 776 800. E. 1.VII.1924).								
Total 1919. . . .	11,683	—	18	706	—	1203	—	1169
» 1920. . . .	11,604	—	11	370	—	1486	—	970
» 1921. . . .	10,226	26	24	21	28	943	—	882
» 1922. . . .	11,420	—	11	61	11	1342	—	842
» 1923. . . .	11,509	24	11	76	5	1340	10	788
» 1924. . . .	10,940	15	15	25	3	1049	6	784
» 1925. . . .	11,568	31	27	81	24	1181	9	786
Janvier — January 24. . . .	1026	6	2	7	5	130	0	55
Février — February 21. . . .	1089	4	1	16	3	179	1	67
Mars — March 21. . . .	1094	1	2	21	1	146	0	80
Avril — April 18. . . .	1033	0	1	13	3	137	0	67
Mai — May 16. . . .	915	2	2	4	4	112	0	66
Juin — June 13. . . .	914	0	2	4	2	90	2	66
Juillet — July 11. . . .	712	0	4	1	0	27	0	46
Août — August 8. . . .	708	2	2	1	1	43	0	51
Septembre — September 5. . . .	731	2	1	0	0	35	0	59
Octobre — October 3. . . .	701	0	3	1	1	42	2	57
» — » 31. . . .	793	6	3	3	0	51	2	42
Novembre — November 28. . . .	886	1	2	5	1	91	1	49
Décembre — December 26. . . .	893	2	2	5	1	96	0	56
1926 Janvier — January 2* . . .	273	0	0	1	0	26	0	16
CHICAGO (Population: 2 942 600. E. 1.juill.1924).								
Total 1919. . . .	33,493	—	35	1514	—	3608	—	3246
» 1920. . . .	34,848	—	31	1725	—	4383	—	2658
» 1921. . . .	30,819	39	34	125	33	2411	—	2362
» 1922. . . .	31,715	—	31	318	25	2858	—	2238
» 1923. . . .	33,764	26	58	475	5	3412	6	2340
» 1924. . . .	32,915	11	44	196	4	2812	2	2434
» 1925. . . .	34,318	17	44	270	31	3075	7	2492
Janvier — January 24. . . .	2998	3	10	25	1	355	0	196
Février — February 21. . . .	2950	1	2	17	3	336	0	201
Mars — March 21. . . .	3156	1	3	71	3	453	0	223
Avril — April 18. . . .	3042	2	0	59	3	364	0	218
Mai — May 16. . . .	2857	2	1	29	6	332	2	195
Juin — June 13. . . .	2752	1	1	15	2	225	0	207
Juillet — July 11. . . .	2267	1	5	9	2	130	2	207
Août — August 8. . . .	2208	0	4	4	1	99	0	182
Septembre — September 5. . . .	2248	0	0	4	3	119	1	158
Octobre — October 3. . . .	2178	2	6	6	2	84	1	167
» — » 31. . . .	2361	1	4	13	1	141	0	162
Novembre — November 28. . . .	2551	3	2	9	0	244	0	168
Décembre — December 26. . . .	2632	1	6	15	4	215	0	189
1926 Janvier — January 2* . . .	749	0	1	1	2	74	1	51

Variole — Smallpox	1920	1921	1922	1923	1924	1925
	1	4	15	1	1	12

NOUVELLE-ORLÉANS — NEW ORLEANS (Population: 409 500. E. 1.juill.1924).								
Total 1919. . . .	7,283	—	51	574	—	710	—	883
» 1920. . . .	6,869	—	27	142	—	723	—	813
» 1921. . . .	6,468	5	36	56	4	457	—	749
» 1922. . . .	6,683	—	41	117	5	504	—	733
» 1923. . . .	7,157	5	37	139	5	579	2	704
» 1924. . . .	7,600	3	44	104	4	599	1	691
» 1925. . . .	7,945	5	39	180	12	505	4	762
Janvier — January 24. . . .	668	0	6	23	0	69	0	67
Février — February 21. . . .	743	0	8	47	0	68	0	71
Mars — March 21. . . .	647	0	0	57	1	59	0	60
Avril — April 18. . . .	446	1	1	9	0	24	0	41
Mai — May 16. . . .	597	1	3	8	0	40	0	66
Juin — June 13. . . .	603	1	8	11	1	26	0	68
Juillet — July 11. . . .	624	1	6	6	0	30	0	55
Août — August 8. . . .	568	0	17	3	0	30	0	48
Septembre — September 5. . . .	501	0	7	4	0	31	2	48
Octobre — October 3. . . .	546	0	8	6	0	23	0	45
» — » 31. . . .	556	2	5	10	0	40	0	50
Novembre — November 28. . . .	569	2	6	11	0	47	2	61
Décembre — December 26. . . .	605	0	1	26	0	47	0	65
1926 Janvier — January 2* . . .	173	0	2	5	0	16	0	17

Variole — Smallpox	1920	1921	1922	1923	1924	1925
	131	39	0	0	0	0

* Une semaine seulement. — One week only.

Note. Les totaux pour 1925 sont provisoires, et se rapportent à l'année du calendrier. — Totals for 1925 are provisional for the calendar year.

VILLES DES ÉTATS-UNIS *(suite)* — UNITED STATES CITIES *(continued)*

Sources: «Mortality Statistics», Bureau du Recensement, 1919-1924. — "Mortality Statistics", Bureau of the Census, 1919-192
"Public Health Reports". 1925.

Période de quatre semaines se terminant le: / Four-week period ending:	Décès, toutes causes Deaths, all causes	Encéphalite léthargique Encephalitis lethargica	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-sp. Cerebro-sp. meningitis	Pneumonie et broncho-pneumonie Pneumonia and broncho-pneumonia	Poliomyélite aiguë Acute poliomyelit.	Tuberculose, toutes formes Tuberculosis, all forms
NEW-YORK (VILLE — CITY) (Population: 6 015 500. E. 1. juill. 1924).								
								a
Total 1919. . . .	74,131	—	124	3683	—	11,139	—	7577
» 1920. . . .	73,393	—	144	2296	—	10,447	—	6343
» 1921. . . .	64,603	150	127	366	156	6654	—	5186
» 1922. . . .	69,846	—	133	854	124	8244	—	5166
» 1923. . . .	69,552	354	141	1052	42	7591	69	5040
» 1924. . . .	71,306	238	190	516	35	8048	94	4861
» 1925. . . .	70,994	181	212	679	99	8537	95	5047
Janvier — January 24. . . .	6455	20	50	86	9	1078	5	451
Février — February 21. . . .	6446	17	22	100	2	1032	3	407
Mars — March 21. . . .	6193	19	6	88	14	872	1	421
Avril — April 18. . . .	6195	23	4	99	10	904	1	429
Mai — May 16. . . .	6091	9	13	70	7	892	3	445
Juin — June 13. . . .	4564	15	15	55	10	656	5	397
Juillet — July 11. . . .	4420	10	9	13	6	341	0	345
Août — August 8. . . .	4420	12	6	13	4	297	18	337
Septembre — September 5. . . .	4498	16	27	10	7	323	25	361
Octobre — October 3. . . .	4457	7	17	19	11	305	16	331
» — » 31. . . .	5189	12	12	31	5	400	10	260
Novembre — November 28. . . .	5317	7	9	42	6	631	6	395
Décembre — December 26. . . .	5261	13	19	41	7	596	2	370
1926 Janvier — January 2* . . .	1488	1	3	12	1	210	0	98
Typhus exanthématique — Typhus		1920	1921	1922	1923	1924	1925	
		—	4	0	0	1	—	
SAN FRANCISCO (Population: 548 300. E. 1. juill. 1924).								
Total 1919. . . .	8,014	—	15	763	—	659	—	922
» 1920. . . .	7,259	—	15	387	—	613	—	682
» 1921. . . .	7,031	13	21	36	—	474	—	648
» 1922. . . .	7,462	—	12	170	—	571	—	648
» 1923. . . .	7,318	21	17	93	4	568	2	680
» 1924. . . .	7,484	22	14	34	3	594	3	659
» 1925. . . .	7,387	15	12	93	9	685	11	645
Janvier — January 24. . . .	699	0	3	8	1	53	0	53
Février — February 21. . . .	595	1	0	8	0	33	1	50
Mars — March 21. . . .	559	3	0	6	0	23	0	48
Avril — April 18. . . .	641	0	1	11	0	37	0	44
Mai — May 16. . . .	600	0	0	5	0	31	0	63
Juin — June 13. . . .	555	1	0	3	2	18	3	42
Juillet — July 11. . . .	531	3	0	1	1	16	2	56
Août — August 8. . . .	347	1	0	0	0	10	2	30
Septembre — September 5. . . .	490	1	1	1	1	30	1	37
Octobre — October 3. . . .	512	2	4	2	0	27	2	36
» — » 31. . . .	536	1	2	1	2	21	0	40
Novembre — November 28. . . .	543	1	1	6	0	27	0	36
Décembre — December 26. . . .	490	1	0	2	1	20	2	41
1926 Janvier — January 2* . . .	165	0	0	6	0	7	0	8
Variole — Smallpox . .		1920	1921	1922	1923	1924	1925	
		0	1	0	0	0	15	
St-LOUIS (Population: 812 700. E. 1. juill. 1924).								
Total 1919. . . .	10,254	—	51	304	—	1250	—	865
» 1920. . . .	10,931	—	20	396	—	1648	—	767
» 1921. . . .	9,607	5	34	42	12	979	—	687
» 1922. . . .	9,933	—	35	130	4	1183	—	701
» 1923. . . .	10,924	15	36	153	8	1356	3	663
» 1924. . . .	10,993	6	30	104	6	1250	5	677
» 1925. . . .	11,379	0	32	20	6	1355	3	615
Janvier — January 24. . . .	1046	0	0	1	1	—	0	49
Février — February 21. . . .	919	0	2	0	0	—	0	39
Mars — March 21. . . .	985	0	1	6	2	—	0	57
Avril — April 18. . . .	1047	0	1	4	0	—	1	57
Mai — May 16. . . .	864	0	0	3	0	—	0	43
Juin — June 13. . . .	830	0	2	2	1	—	0	48
Juillet — July 11. . . .	785	0	3	1	0	—	0	47
Août — August 8. . . .	784	0	3	0	1	—	0	36
Septembre — September 5. . . .	780	0	5	1	0	—	0	31
Octobre — October 3. . . .	769	0	7	2	0	—	0	30
» — » 31. . . .	777	0	4	0	0	—	1	44
Novembre — November 28. . . .	901	0	3	0	0	—	0	44
Décembre — December 26. . . .	895	0	2	1	1	—	1	34
1926 Janvier — January 2* . . .	261	0	0	0	0	—	0	6

a Tuberculose pulmonaire — Pulmonary Tuberculosis. * Une semaine seulement. — One week only.

Note. Les totaux pour 1925 sont provisoires, sauf pour New-York, et se rapportent à l'année du calendrier.
Totals for 1925, except for New York, are provisional for the calendar year.

VILLES DU PÉROU — PERUVIAN CITIES

ource : Rapports du Département de la Santé publique. — Reports from the Public Health Department.

Cause de décès — Cause of Death		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
CALLAO (Population: 160 112. E. 1925.)																		
Décès, toutes causes	Deaths, all causes	1337	1595	1612	1523	1667	215	128	201	131	130	117	114	141	107	133	127	123
Diarrhée et entérite au-dessous de 2 ans	Diarrhœa and enteritis under 2 years	146	175	200	185	266	59	29	42	20	11	12	15	15	12	14	20	17
Coqueluche	Whooping-cough	3	12	26	10	7	0	0	1	0	0	0	1	0	0	3	1	1
Diphtérie	Diphtheria	2	3	2	2	1	0	0	0	0	0	0	0	0	0	0	1	0
Fièvre typhoïde	Enteric fever	17	24	19	8	15	3	0	2	1	0	0	0	2	2	1	3	1
Grippe	Influenza	26	7	43	21	33	6	7	6	2	6	1	1	1	0	0	2	1
Paludisme	Malaria	15	12	26	21	31	4	0	3	1	1	3	4	1	2	4	5	3
Peste	Plague	21	24	9	20	15	2	1	0	0	3	1	1	1	0	5	0	1
Rougeole	Measles	0	7	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Septicémie puerpérale	Puerperal septicæmia	4	12	5	9	1	0	0	0	0	0	0	0	0	0	1	0	0
Tuberculose de l'appareil respiratoire	Tuberculosis of respiratory organs	278	342	329	317	363	39	18	38	31	31	26	31	47	24	28	22	28
Tuberculose, autres formes	Tuberculosis, other forms	32	58	54	48	36	3	6	5	2	5	4	3	3	0	2	1	2
Typhus exanthém.	Typhus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Variole	Smallpox	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIMA. (Population : 189 968. E. 1925.)																		
Décès, toutes causes	Deaths, all causes	4761	4334	4857	4607	5500	593	547	529	484	395	388	426	411	415	406	426	480
Diarrhée et entérite au-dessous de 2 ans	Diarrhœa and enteritis under 2 years	635	681	638	614	770	155	126	72	77	51	42	44	30	27	48	46	52
Coqueluche	Whooping-cough	40	29	66	54	117	4	3	3	1	2	4	6	12	20	18	22	22
Diphtérie	Diphtheria	13	8	15	6	5	2	1	0	0	0	0	0	1	0	0	0	1
Fièvre typhoïde	Enteric fever	87	74	71	48	59	2	10	10	6	3	2	2	6	5	6	2	5
Grippe	Influenza	110	53	125	57	182	8	34	23	12	13	19	15	15	8	18	10	7
Paludisme	Malaria	112	84	97	68	102	4	14	8	10	8	6	6	12	4	4	11	15
Peste	Plague	57	35	63	50	41	6	5	2	2	3	1	6	5	3	4	1	3
Rougeole	Measles	12	32	7	48	25	5	5	4	1	4	0	0	0	0	0	2	4
Scarlatine	Scarlet fever	1	0	0	0	2	0	0	1	0	1	0	0	0	0	0	0	0
Septicémie puerpérale	Puerperal septicæmia	36	16	29	24	32	4	1	1	3	1	3	3	3	3	4	4	2
Tuberculose de l'appareil respiratoire	Tuberculosis of respiratory organs	796	745	802	779	824	81	60	67	72	73	71	70	72	73	66	62	57
Tuberculose, autres formes	Tuberculosis, other forms	219	160	142	116	247	19	22	27	17	17	21	10	25	18	19	23	29
Typhus exanthém.	Typhus	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
Variole	Smallpox	3	36	5	0	2	0	0	1	0	1	0	0	0	0	0	0	0

ASSOMPTION — ASUNCION

(Population : 91 259. E. 1925.)

Source: Rapports de la direction générale de Statistique. — Reports from the General Direction of Statistics.

Cause de décès — Cause of Death		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Jan. Jan.	Fév. Feb.	Mars Mar.	Avril April	Mai May	Juin June	Juil. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Coqueluche	Whooping-cough	3	6	12	28	7	0	1	0	0	1	0	0	0	1	1	0	3
Diarrhée et entérite au-dessous de 2 ans	Diarrhœa and enteritis under 2 years	138	123	132	155	127	11	20	10	15	6	4	5	2	8	16	10	20
Diphtérie	Diphtheria	10	4	3	2	2	0	0	1	0	0	0	0	0	0	0	1	0
Dysenterie	Dysentery	8	13	13	18	21	3	3	3	4	1	1	0	1	2	0	2	1
Fièvre typhoïde	Typhoid fever	32	30	41	39	51	5	5	4	4	3	1	1	3	3	7	4	11
Grippe	Influenza	72	45	113	31	77	2	4	4	1	2	21	6	5	8	12	10	2
Lèpre	Leprosy	7	15	6	8	7	1	2	0	0	2	0	1	0	0	0	0	1
Paludisme	Malaria	28	7	10	10	6	1	1	0	1	0	1	0	0	0	0	0	2
Rubéole	German measles	0	0	0	19	2	1	1	0	0	0	0	0	0	0	0	0	0
Syphilis congénitale	Congenital syphilis	51	45	67	63	39	3	1	3	4	4	4	4	4	2	3	2	5
Tétanos infantile	Infantile tetanus	49	65	69	63	65	7	11	2	10	7	5	3	5	2	4	4	5
Tuberculose pulmon.	Pulmon. tuberculos.	132	106	144	142	174	11	12	8	11	17	11	20	19	18	15	12	20
Tuberculose, autres formes	Tuberculosis, other forms	61	63	23	41	25	2	1	0	4	1	2	1	3	3	2	4	2
Variole	Smallpox	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0

Aucun décès causé par la scarlatine, 1921–1925. — No death from scarlet fever, 1921–1925.

BUENOS-AIRES

(Population : 1 928 556. E. 31. déc. 1925.)

Source : Boletín Mensual de Estadistica Municipal de la Ciudad de Buenos Aires.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite, au-dessous de 2 ans Diarrhœa and enteritis under 2 years	Diphtérie Diphtheria	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Lèpre Leprosy	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie et broncho-pneumonie Pneumonia and broncho-pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose des voies respiratoires Tuberculosis of the respiratory organs	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	23800	3540	56	1464	208	91	162	664	11	33	2864	49	36	3120	482
» 1920	24123	3648	53	1632	220	103	170	123	19	26	2903	116	60	2766	655
» 1921	23860	3388	27	1433	157	86	158	537	25	2	2761	20	58	2790	746
» 1922	23691	3785	150	1396	157	106	156	176	26	7	2637	111	23	2849	694
» 1923	24353	3426	41	1218	172	72	142	268	28	7	2239	55	23	2888	715
» 1924	25186	3881	43	1282	142	84	96	280	26	5	2767	100	26	3253	462
» 1925	25421	3901	36	1531	180	91	136	261	38	10	2532	23	59	3374	485
Janvier — January	2072	318	5	177	9	6	14	10	2	0	160	6	4	307	44
Février — February	1940	341	2	171	13	9	20	12	1	0	141	3	2	234	37
Mars — March	1966	319	4	173	14	8	20	2	3	1	124	1	3	291	54
Avril — April	1844	217	0	103	10	5	28	6	5	0	109	0	0	319	44
Mai — May	1973	257	3	103	24	8	17	14	4	0	157	0	2	230	38
Juin — June	2337	251	3	63	18	7	8	47	2	2	271	2	7	276	30
Juillet — July	2334	297	1	51	17	11	5	57	0	1	292	3	4	267	36
Août — August	2446	320	1	51	11	8	5	57	8	2	439	0	4	261	24
Septembre — September	2101	286	2	52	16	9	2	23	3	1	231	1	5	300	43
Octobre — October	2048	327	4	109	15	8	5	14	4	1	208	3	9	290	55
Novembre — November	2296	566	5	281	13	8	5	12	4	2	226	3	5	309	44
Décembre — December	2064	402	6	197	20	4	7	7	2	0	174	1	14	290	34

	1919	1920	1921	1922	1923	1924	1925
Dysenterie — Dysentery	17	13	18	14	11	8	8
Encéphalite léthargique — Encephalitis lethargica	—	—	—	—	—	5	7
Paludisme — Malaria	3	1	1	2	2	3	5

22 VILLES DU GUATÉMALA — 22 CITIES OF GUATEMALA

(Population : 415 000. E. 1925.)

Source : Rapports de la Direction générale de Statistique. — Reports from the General Direction of Statistics.

Maladie — Disease		Total 1925 *	1925									
			Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.
Décès, toutes causes	Deaths, all causes	11059	985	923	1065	1221	1432	1454	1255	1022	881	821
Coqueluche	Whoop.-cough	72	4	5	7	8	6	4	7	6	9	16
Diphtérie	Diphtheria	7	1	1	1	3	0	0	0	1	0	0
Erysipèle	Erysipelas	19	4	3	4	3	3	2	0	0	0	0
Fièvre typhoïde	Typhoid fever	20	1	1	2	1	2	3	0	3	3	4
Grippe	Influenza	75	10	2	11	12	11	10	4	4	6	5
Rougeole	Measles	156	6	7	12	16	37	28	23	11	11	5
Syphilis	Syphilis	5	1	2	0	0	0	1	0	0	1	0
Tuberculose intestinale	Intestinal tuberculosis	27	5	4	2	2	2	1	3	2	5	1
Tuberculose pulmonaire	Pulmonary tuberculosis	122	12	5	9	16	14	13	13	14	13	13
Variole	Smallpox	1	0	0	0	0	0	0	0	0	0	1

* Pour dix mois seulement. — For ten months only.

GUAYAQUIL

(Population : 100 000. E. 1921.)

Source : Informe del Director General de Sanidad Publica, 1924.

Cause de décès — Cause of Death		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925
Décès, toutes causes	Deaths, all causes	3808	3690	4474	4461	—
Bronchite aiguë	Acute bronchitis	—	—	—	176	—
Coqueluche	Whooping-cough	—	—	—	66	—
Diarrhée et entérite au-dessous de 2 ans	Diarrhœa and enteritis under 2 years	—	—	—	547	—
Diphtérie	Diphtheria	—	—	—	1	—
Dysenterie	Dysentery	154	115	149	254	—
Encéphalite léthargique	Encephalitis lethargica	—	—	—	3	—
Erysipèle	Erysipelas	—	—	—	5	—
Fièvres typhoïde et paratyphoïde	Enteric fever	110	147	133	86	—
Grippe	Influenza	—	—	—	76	—
Lèpre	Leprosy	—	—	—	1	—
Paludisme	Malaria	363	331	396	267	—
Peste	Plague	95	19	32	46	53
Pneumonie	Pneumonia	—	—	—	422	—
Rougeole	Measles	10	0	28	83	—
Scarlatine	Scarlet fever	—	—	—	0	—
Septicémie puerpérale	Puerperal septicæmia	—	—	—	16	—
Tuberculose de l'appareil respir.	Tuberculosis of respir. organs	—	—	—	666	—
Tuberculose, autres formes	Tuberculosis, other forms	—	—	—	0	—
Typhus exanthématique	Typhus	—	—	—	0	—
Variole	Smallpox	4	0	0	1*	—

* Importé de Valparaiso. — Imported from Valparaiso.

LA HAVANE — HABANA

(Population: 399 067. E. 1.juill.1925.)

Sources: Sanitad y Beneficiencia, Boletin Oficial, 1919-1924. — Boletin Decenal Epidemiologico Sanitario, 1925.

Cause de décès — Cause of Death		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925. Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Décès, toutes causes	Deaths, all causes	7457	7593	7005	7537	7874	624	579	639	593	648	793	824	735	617	588	597	637
Diphtérie	Diphtheria	17	13	18	12	21	1	0	3	1	3	4	5	1	1	0	1	1
Fièvres typhoïde et paratyphoïde	Enteric fever	113	138	91	204	82	7	6	5	2	9	2	16	14	6	6	6	3
Méningite cérébro-spinale	Cerebro-spinal meningitis	11	2	1	2	7	0	0	1	1	4	0	1	0	0	0	0	0
Paludisme	Malaria	23	35	29	16	19	1	1	1	1	2	1	4	1	2	4	0	1
Rougeole	Measles	4	1	0	2	31	0	0	0	2	7	21	0	1	0	0	0	0
Scarlatine	Scarlet fever	3	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0
Tétanos infantile	Infantile tetanus	3	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
Varicelle	Chickenpox	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
Variole	Smallpox	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MEXICO — MEXICO CITY

(Population: 615 367. E. 1922.)

Source: Boletín del Departamento de Salubridad Publica.

Maladie — Disease		Total 1925	1925 1er trimestre 1st quarter	2me trimestre 2nd quarter	3me trimestre 3rd quarter	4me trimestre 4th quarter
Décès, toutes causes	Deaths, all causes	20499	6070	6125	4284	4020
Coqueluche	Whooping-cough	249	98	60	41	50
Diphtérie	Diphtheria	34	13	10	4	7
Dysenterie	Dysentery	82	66	24	6	18
Erysipèle	Erysipelas	66	12	23	13	18
Fièvre puerpérale	Puerperal fever	100	22	20	23	35
Fièvre typhoïde	Enteric fever	50	18	14	9	9
Grippe	Influenza	47	10	12	5	20
Lèpre	Leprosy	8	1	1	3	3
Méningite cérébro-spinale	Cerebro-spinal mening.	42	12	18	5	7
Paludisme	Malaria	75	39	15	10	11
Rage	Rabies	3	1	0	1	1
Rougeole	Measles	442	169	246	26	1
Scarlatine	Scarlet fever	3	1	0	1	1
Syphilis	Syphilis	368	103	85	94	86
Tuberculose, toutes formes	Tuberculosis, all forms	1052	290	267	240	255
Typhus exanthématique	Typhus	35	4	9	9	13
Variole	Smallpox	22	7	7	6	2

MONTEVIDEO

(Population : 422 499. E. 31. XII. 1924.)

Sources: Morbosidad y Mortalidad infecto-contagiosa en la Republica O. del Uruguay, 1919-1921.
Boletín del Consejo Nacional de Higiene, 1924-1925.

Mois - Month		Décès, toutes causes Deaths, all causes	Coqueluche Whooping-cough	Diphtérie Diphtheria	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spin. Cerebro-spin. meningitis	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose des voies resp. Tuberculosis of resp. organs
Total	1919 . .	1663	20	68	6	22	123	313	6	—	—	1373
»	1920 . .	1574	17	107	5	16	106	6	1	39	2	1174
»	1921 . .	1453	9	76	12	14	113	57	4	4	3	1122
»	1922 . .	1573	30	53	7	13	131	3	3	17	2	1266
»	1923 . .	1912	12	63	3	28	178	107	8	36	0	1410
»	1924 . .	1899	51	35	11	34	132	46	9	56	17	1407
»	1925 . .	2037	38	29	5	23	201	41	12	31	9	1604
Janvier — January	. .	183	5	4	0	4	12	1	2	6	0	146
Février — February	. .	201	3	1	0	1	39	6	0	1	0	149
Mars — March	. .	190	0	0	0	0	39	0	1	4	0	140
Avril — April	. .	166	2	0	1	0	38	1	1	0	0	115
Mai — May	. .	154	1	3	0	0	27	2	0	0	2	116
Juin — June	. .	146	2	4	1	4	13	1	0	2	2	114
Juillet — July	. .	157	4	2	2	4	1	8	1	0	0	131
Août — August	. .	183	7	3	0	2	6	11	0	2	0	150
Septembre — September	. .	174	5	7	0	3	8	6	3	4	0	131
Octobre — October	. .	152	7	2	1	2	1	3	2	4	1	125
Novembre — November	. .	167	2	2	0	2	6	2	1	8	3	140
Décembre — December	. .	164	0	1	0	1	11	0	1	0	1	147

	1923	1924	1925
Charbon — Anthrax	3	20	0
Encephalite léthargique — Encephalitis lethar.	2	9	1
Peste — Plague	1	0	0
Poliomyélite aiguë — Acute poliomyelitis	1	0	2

TORONTO

(Population: 738 800. E. 31. déc. 1923.)

Source: PRELIMINARY MONTHLY REPORT OF VITAL STATISTICS.

Cause de décès - Cause of Death	Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925. Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Décès, toutes causes — Deaths, all causes	5884	5586	6120	—	5632	494	480	591	504	451	444	396	401	404	502	455	510
Bronchite — Bronchitis	97	58	71	—	22	2	4	2	1	2	3	0	0	1	3	3	1
Diarrhée et entérite — Diarrhœa and enteritis	281	159	114	—	112	3	2	9	9	8	5	4	14	34	16	5	3
Diphtérie — Diphtheria	98	64	57	—	63	6	3	7	3	2	8	4	6	4	5	6	9
Grippe — Influenza	69	127	322	—	135	18	17	24	17	10	4	2	3	3	5	12	20
Pneumonie et broncho-pneumonie — Pneumonia and broncho-pneumonia	587	583	585	—	484	44	55	58	60	42	40	22	17	16	42	37	51
Tuberculose pulmonaire — Pulmonary tuberculosis	169	165	190	—	184	14	16	27	18	15	13	9	16	12	8	20	16
Tuberculose, autres formes — Tuberculosis, other forms	57	71	73	—	74	8	7	4	4	13	7	5	1	5	6	7	7

ASIE — ASIA

VILLES DES INDES — INDIAN TOWNS

Sources: MORTALITY IN CHIEF SEAPORT TOWNS. EPIDEMIC DISEASES SUMMARY. 1925 AND ANNUAL MUNICIPAL PUBLIC HEALTH REPORTS FOR 192

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Choléra asiatique Asiatic cholera	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Paludisme Malaria	Peste Plague	Pneumonie Pneumonia	Tuberculose pulmonaire Pulmonary tuberculosis	Variole Smallpox
BOMBAY (Population: 1 175 914. R. 1921).												
Total 1919.	68610	8455	3	1576	131	1942	31	262	702	14818	1817	780
» 1920.	45839	119	4	1121	157	1605	39	311	282	11815	1631	294
» 1921.	53609	70	—	1512	152	1389	—	545	311	—	—	406
» 1922.	37297	15	5	1141	123	528	90	485	632	9118	1325	61
» 1923.	37959	189	—	—	137	250	—	403	1329	—	—	479
» 1924.	38774	34	8	1033	137	118	—	488	409	9764	1428	1242
» 1925.	32469	11	5	705	155	91	20	547	162	8115	1205	551
Janvier — January 24.	2792	1	1	88	5	4	1	43	3	699	123	23
Février — February 21.	2872	0	0	60	6	4	1	45	3	613	103	84
Mars — March 21.	2782	0	1	53	12	9	0	36	28	827	99	130
Avril — April 18.	2724	0	0	30	11	14	3	24	28	757	77	120
Mai — May 16.	2678	1	1	29	16	11	1	30	47	728	84	78
Juin — June 13.	2271	0	1	51	16	5	1	26	24	599	86	45
Juillet — July 11.	2154	3	0	49	10	5	3	25	13	544	73	22
Août — August 8.	2251	4	0	67	7	3	0	19	5	582	84	10
Septembre — September 5.	2478	0	0	99	17	6	1	32	7	604	93	4
Octobre — October 3.	2309	0	0	63	11	10	3	63	2	571	88	2
» — » 31.	2398	2	1	40	11	7	3	87	1	575	90	7
Novembre — November 28.	2169	0	0	33	17	8	1	66	0	403	95	9
Décembre — December 26.	2074	0	0	34	8	2	2	43	1	485	83	13
1926 Janvier — January 2*	517	0	0	9	1	3	0	8	0	128	27	4

Fièvre récurrente — Relapsing fever . .	1919	1920	1921	1922	1923	1924	1925
	152	43	57	56	5	3	2

CALCUTTA (Population: 907 850. R. 1921).												
Total 1919.	—	—	—	—	—	—	—	—	—	—	—	—
» 1920.	37839	3688	105	2310	400	3363	34	1187	334	2601	1826	1870
» 1921.	35276	2302	77	2005	360	1665	31	1289	53	3962	2002	2925
» 1922.	30395	1997	55	2109	328	927	32	1214	37	3183	2095	89
» 1923.	26381	1269	70	1664	413	688	22	1081	144	2722	2106	450
» 1924.	a25784	1223	a54	a1858	a504	a377	a30	a1402	43	a3479	a1967	301
» 1925.	35670	1006	36	1955	610	573	22	1988	9	3843	2482	3923
Janvier — January 24.	2858	42	1	224	28	44	3	141	1	402	176	202
Février — February 21.	3130	76	2	154	50	39	2	154	0	354	177	507
Mars — March 21.	3924	69	1	183	37	68	2	201	0	458	207	1204
Avril — April 18.	3566	174	4	133	41	50	2	165	0	306	191	1183
Mai — May 16.	2780	205	1	137	46	22	2	158	0	229	202	506
Juin — June 13.	2128	132	4	101	47	29	0	124	1	194	215	168
Juillet — July 11.	1897	38	1	111	48	21	2	122	6	215	197	58
Août — August 8.	2085	31	4	115	47	25	3	98	0	193	185	28
Septembre — September 5.	2291	23	4	139	68	71	1	114	0	238	176	15
Octobre — October 3.	2317	22	0	150	65	49	1	143	0	253	162	9
Octobre — October 31.	2386	30	2	156	42	42	1	160	0	237	168	5
Novembre — November 28.	2786	89	4	161	51	54	2	203	0	314	196	9
Décembre — December 26.	2784	66	7	138	30	51	1	166	1	358	173	16
1926 Janvier — January 2*	738	9	1	53	10	8	0	39	0	92	57	13

Fièvre récurrente — Relapsing fever . .	1919	1920	1921	1922	1923	1924	1925
	0	0	0	2	0	0	0

* Une semaine seulement. — One week only.
a Données incomplètes. — Data incomplete.

VILLES DES INDES *(suite)* — INDIAN TOWNS *(continued)*

urces: Mortality in Chief Seaport Towns. Epidemic Diseases Summary. 1925 and Annual Municipal Public Health Reports For 1924.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Choléra asiatique Asiatic cholera	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Paludisme Malaria	Peste Plague	Pneumonie Pneumonia	Tuberculose pulmonaire Pulmonary tuberculosis	Variole Smallpox
MADRAS (Population: 526 911. R. 1921).												
Total 1919	27187	642	16	3097	52	1303	0	736	14	3125	1178	611
» 1920	21418	22	2	2380	66	250	0	560	8	2783	910	109
» 1921	20268	139	4	2064	85	110	9	652	3	2911	905	180
» 1922	22475	17	7	2235	74	24	6	763	1	3297	1027	1121
» 1923	19933	21	—	—	51	—	—	783	1	—	—	151
» 1924	21960	97	3	1922	65	14	7	971	—	1389	1347	197
» 1925	24931	194	7	2280	88	30	2	1319	0	1631	1533	699
Janvier — January 24	1863	57	0	151	3	3	0	102	0	135	113	33
Février — February 21	1931	36	1	163	4	0	0	99	0	139	116	91
Mars — March 21	1857	5	1	188	3	1	0	72	0	128	116	150
Avril — April 18	1878	1	1	167	5	0	0	90	0	119	124	157
Mai — May 16	2033	2	0	214	10	1	0	104	0	133	149	82
Juin — June 13	1797	1	0	186	12	9	0	94	0	145	111	45
Juillet — July 11	1548	1	1	124	5	4	1	81	0	132	97	40
Août — August 8	1574	4	1	140	10	3	1	88	0	117	89	36
Septembre — September 5	1984	7	0	191	7	4	0	115	0	112	106	27
Octobre — October 3	1801	7	1	173	9	3	0	107	0	107	102	17
Octobre — October 31	1873	0	1	160	10	0	0	112	0	126	122	13
Novembre — November 28	1892	6	0	159	4	2	0	95	0	102	108	3
Décembre — December 26	2363	54	0	209	6	0	0	128	0	108	125	4
926 Janvier — January 2*	537	13	0	55	0	0	0	32	0	28	40	1

Fièvre récurrente — Relapsing fever	1919	1920	1921	1922	1923	1924	1925
	0	0	0	0	0	0	0

RANGOUN — RANGOON (Population: 345 505. R. 1921).

Total	1919	15554	232	—	—	15	3336	—	261	782	—	816	656
»	1920	12140	61	—	—	31	813	—	352	1127	—	801	120
»	1921	12066	101	—	—	38	—	—	—	1126	—	—	18
»	1922	12323	264	4	—	43	236	32	406	1402	—	994	72
»	1923	11918	48	8	—	47	137	22	350	1159	—	—	363
»	1924	11448	132	10	—	63	83	16	279	505	—	975	99
»	1925	12485	60	4	671	43	47	27	226	622	1585	1227	635
Janvier — January	24	871	4	0	37	1	1	2	17	28	122	88	32
Février — February	21	944	5	0	36	7	3	4	18	50	105	103	73
Mars — March	21	1031	2	1	23	1	1	3	22	63	136	96	152
Avril — April	18	1091	5	0	37	7	8	4	11	59	137	102	201
Mai — May	16	1115	17	0	61	4	5	1	18	99	155	95	102
Juin — June	13	914	7	0	71	5	3	4	13	34	143	91	41
Juillet — July	11	961	9	0	103	4	3	2	13	64	114	88	18
Août — August	8	1046	3	1	122	1	1	0	24	72	107	114	11
Septembre — September	5	923	2	1	55	3	6	0	18	65	120	81	1
Octobre — October	3	899	1	1	38	1	0	4	20	57	94	93	2
» — »	31	823	1	0	23	4	4	1	23	16	112	67	0
Novembre — November	28	801	3	0	20	1	6	0	12	11	98	77	0
Décembre — December	26	849	1	0	36	3	5	1	15	4	114	83	1
926 Janvier — January	2*	217	0	0	9	1	1	1	2	0	28	40	1

Fièvre récurrente — Relapsing fever	1919	1920	1921	1922	1923	1924	1925
	0	0	0	0	0	0	1

* Une semaine seulement. — One week only.

DELHI

(Population: 246 987. R. 1921.)

Source: Monthly Return of Vital Statistics of the Delhi Province.

Cause de décès — Cause of Death		Total 1925	Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Décès, toutes causes	Deaths, all causes	7253	521	542	654	720	798	528	463	687	648	550	564	578
Choléra asiatique	Asiatic cholera	31	0	0	0	0	3	6	7	2	4	1	8	0
Diarrhée et entérite	Diarrhœa and enteritis	322	25	18	16	30	23	21	24	50	38	30	31	16
Peste	Plague	11	0	6	3	2	0	0	0	0	0	0	0	0
Variole	Smallpox	13	1	0	4	4	4	0	0	0	0	0	0	0

Note. — Ce tableau ne concerne que la Municipalité de Delhi. Les données sont provisoires.
This table relates to the Delhi Municipality only. The data are provisional.

BANGKOK

(Population : 452 000. E. 1925.)

Sources: Bulletin mensuel et rapports télégraphiques du Bureau d'Orient. — Monthly Bulletin and Telegraphic Repor of the Eastern Bureau.

Cause de décès / Cause of Death		Total 1923	Total 1924	Total 1925	Période de quatre semaines se terminant le: — Four-week period ending: Janv. Jan. 24	Févr. Feb. 21	Mars March 21	Avril April 18	Mai May 16	Juin June 13	Juill. July 11	Août Aug. 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Dec. 26	Jan. 2* 1926
Choléra asiatique	Asiatic cholera	108	61	340	2	3	2	5	2	0	2	0	1	0	20	131	159	83
Peste	Plague	329	67	36	1	1	5	8	7	4	4	2	0	1	0	3	0	1
Variole	Smallpox	743	173	61	3	17	12	5	6	11	4	0	0	0	0	0	1	6

* Une semaine seulement. — One week only.

BATAVIA

(Population : 289 640. E. 1925.)

Source: Rapport omtrent besmettelijke Ziekten in Havenplaatsen van Nederlandsch-Indië.

Cause de décès — Cause of Death		Total 1922	Total 1923	Total 1924	Total 1925	1925 — Période de quatre semaines se terminant le: — Four-week period ending: Jan. Jan. 28	Fév. Feb. 25	Mars Mar. 25	Avril April 22	Mai May 20	Juin June 17	Juil. July 15	Août Aug. 12	Sept. Sept. 9	Oct. Oct. 7	Nov. Nov. 4	Déc. Dec. 2	D D 3
Dysenterie bacillaire	Dysentery, bacillary	10	9	11	12	1	1	1	1	0	1	2	1	1	0	0	2	
Fièvre typhoïde	Enteric fever	121	64	48	63	2	1	5	5	6	6	4	5	4	6	9	4	
Méningite cérébro-spinale	Cerebro-spinal meningitis	25	3	0	4	0	0	0	3	0	1	0	0	0	0	0	0	

COLOMBO

(Population: 250 500. E. 30. VI. 1923.)

Source: Bulletin mensuel du Bureau d'Orient. — Monthly Bulletin of the Eastern Bureau.

Maladie — Disease		Total 1923	Total 1924	Total 1925	1925 — Période de quatre semaines se terminant le: — Four-week period ending: Janv. Jan. 24	Févr. Feb. 21	Mars March 21	Avril April 18	Mai May 16	Juin June 13	Juill. July 11	Août Aug. 8	Sept. Sept. 5	Oct. Oct. 3	Oct. Oct. 31	Nov. Nov. 28	Déc. Dec. 26	Ja J
Choléra asiatique	Asiatic cholera	0	—	6	2	0	0	0	0	2	0	0	0	0	2	0	0	
Peste	Plague	204	—	56	3	6	6	6	1	5	7	5	9	2	1	4	1	
Variole	Smallpox	1	—	2	0	0	1	0	1	0	0	0	0	0	0	0	0	

* Une semaine seulement. — One week only.

MANILLE — MANILA

(Population: 308 000. E. 1924.)

Sources: Bulletin mensuel du Service de Santé, 1924. — Monthly Bulletin of the Health Service, 1924. Weekly Report of Communicable Diseases, City of Manila, 1925.

Maladie — Disease		Total 1923	Total 1924	Total 1925	1925 — Période de quatre semaines se terminant le: Four-week period ending: Janv. Jan. 25	Févr. Feb. 22	Mars March 22	Avril April 19	Mai May 14	Juin June 14	Juill. July 12	Août Aug. 9	Sept. Sept. 6	Oct. Oct. 4	Nov. Nov. 1	Nov. Nov. 29	Déc. Déc. 27	3 J 19
Choléra asiatique	Asiatic cholera	0	2	76	0	0	0	0	0	0	1	2	0	48	21	2	2	
Diphtérie	Diphtheria	15	36	14	0	0	1	4	0	2	1	0	1	2	2	1	0	
Dysenterie	Dysentery	115	168	131	5	5	6	3	3	2	10	16	18	16	14	13	19	
Fièvres typhoïde et paratyphoïde	Enteric fever	270	279	169	16	10	7	16	13	7	12	14	15	22	16	10	9	
Grippe	Influenza	46	115	67	7	8	6	3	2	3	8	6	8	5	6	2	3	
Tuberculose, toutes formes	Tuberculosis, all forms	1670	1902	1134	20	51	62	103	98	78	107	81	111	93	84	111	124	

* Une semaine seulement. — One week only.

SINGAPOUR — SINGAPORE

(Population: 396 341. E. 1925.)

Sources: Rapports annuels du Service de Santé de la Municipalité de Singapour (1921-23). Annual Reports of Health Department of the Municipality of Singapore, 1921-23.
Rapport statistique de la Municipalité de Singapour, 1925; Health Statement of the Municipality of Singapore, 1925.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Décès de 0-1 an Deaths up to 1 year	Béribéri Beri-beri	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre puerpérale Puerperal fever	Fièvres typh. et paratyph. Enter. fever	Méningite cérébro-spinale Cerebro-spinal meningitis	Paludisme Malaria	Peste Plague	Pneumonie Pneumonia	Tuberculose pulmonaire Pulmonary tuberculosis
Total 1919	10756	2234	874	7	746	10	77	17	1450	8	1026	347
» 1920	11731	2233	639	11	704	10	80	20	1719	55	1483	364
» 1921	11947	2383	886	10	689	10	100	44	1497	28	1271	421
» 1922	11553	2488	968	9	695	13	47	26	1047	37	1275	493
» 1923	10049	2431	636	5	514	11	40	7	869	50	1224	595
» 1924	10420	2614	672	6	576	23	41	9	848	17	1262	576
» 1925**	11184	2600	740	15	605	14	80	9	962	53	1481	575
Janvier — January 24	705	158	42	0	47	1	6	0	52	2	96	97
Février — February 21	718	172	46	1	37	0	4	0	54	5	80	83
Mars — March 21	694	144	46	1	32	1	6	1	44	9	85	76
Avril — April 18	805	144	53	2	50	1	4	2	63	11	107	94
Mai — May 16	917	230	56	0	10	1	6	3	70	12	137	107
Juin — June 13	914	207	51	0	47	3	5	2	76	2	155	113
Juillet — July 11	848	199	65	0	37	1	7	0	61	1	114	96
Août — August 8	845	193	61	2	58	0	3	1	66	2	104	94
Septembre — September 5	924	213	49	1	43	1	8	0	78	0	127	94
Octobre — October 3	935	240	62	2	44	2	7	0	92	0	115	83
» — » 31	991	236	84	4	54	3	4	0	102	0	114	113
Novembre — November 28	914	200	64	1	36	1	12	0	100	7	118	106
Décembre — December 26	924	250	57	1	35	0	9	0	93	2	125	100
1926 Janvier — January 2*	222	49	15	1	0	0	0	0	26	0	23	32

* Une semaine seulement. — One week only.
** Total pour l'année du calendrier. — Total for calendar year.

TEHERAN

(Population: 210 000. R. 1922.)

ource: Rapports de la section de Statistique municipale. — Reports from the Municipal Statistical Section.

Cause de décès — Cause of death		Total 1925	22 déc. 21 janv. 1926	22 janv. 21 févr.	22 févr. 21 mars	22 mars 21 avril	22 avril 21 mai	22 mai 21 juin	22 juin 21 juill.	22 juill. 21 août	22 août 21 sept.	22 sept. 21 oct.	22 oct. 21 nov.	22 nov. 21 déc.
Toutes causes	All causes	5040	417	583	506	419	322	310	349	326	377	512	498	421
Fièvre typhoïde	Enteric fever	115	4	8	14	13	6	15	8	6	16	7	12	6
Paludisme	Malaria	315	14	24	27	36	30	26	21	19	28	42	30	18
Typhus exanthém.	Typhus	0	0	0	0	0	0	0	0	0	0	0	0	0
Variole	Smallpox	908	10	10	9	11	18	28	47	68	135	262	203	107

	1922	1923	1924
Décès, toutes causes — Deaths, all causes	4,160	4,501	4,540

EUROPE.

VILLES D'ALLEMAGNE — GERMAN TOWNS

46 villes de plus de 100 000 habitants. — 46 Towns with over 100 000 inhabitants.

(Population: 16 746 000. R. 16 juin 1925.)

Source: Reichs - Gesundheitsblatt.

Semaine se terminant le: Week ending:	Décès toutes causes Deaths all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée total Diarrhœa total	Diarrhée et entérite 0-1 an Diarrhœa and enteritis 0-1 year	Diphtérie Diphtheria	Dysenterie Dysentery	Encephalite léthargique Encephalitis lethargica	Fièvre puerpér. Puerperal fever	Fièvre typhoide Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie Pneumonia	Rougeole, rubéole Measles and German measles	Scarlatine Scarlet fever	Tuberculose, toutes formes Tuberculosis, all forms	Tuberculose jusqu'à 15 ans Tuberculosis
Total 1919	221760	30702	1599	7739	5513	2412	—	—	1395	678	—	—	—	635	536	37429	—
» 1920	217580	42923	1654	10947	8868	1749	—	—	1663	540	—	—	—	1169	400	25309	—
» 1921	207131	40087	971	10010	7035 *	1390	825 *	—	1702	468	3572	90 *	17830	993	357	24964	—
» 1922	221581	37241	1611	6107	4723	1048	443	—	1603	374	6985	324	21573	1074	280	27232	—
» 1923	211626	32426	1189	6976	5109	1022	620	—	1654	352	3532	297	17136	2302	217	29432	—
» 1924	194340	25724	1029	4153	2982	779	295	—	1278	362	3052	176	15138	286	203	22583	227
» 1925	190486	25533	968	3728	2646	747	174	74	1058	336	2531	133	14934	1455	230	19805	209
Janvier-January 10	3844	523	21	67	51	26	1	5	22	3	76	2	341	24	3	409	42
17	3819	529	23	46	34	19	1	3	24	3	80	1	319	19	3	391	44
24	3837	537	19	63	48	18	1	7	32	5	68	2	303	31	1	427	46
31	3766	545	20	48	31	19	2	3	17	8	67	3	319	33	4	417	41
Février-February 7	3870	566	27	56	44	27	0	4	31	2	75	7	340	30	6	405	45
14	3822	574	22	55	42	26	1	4	22	4	61	1	341	29	7	431	42
21	3855	561	23	60	34	25	0	3	21	6	71	2	333	26	4	400	39
28	3853	562	23	43	32	23	3	1	20	1	61	2	348	45	2	444	48
Mars-March 7	3922	540	15	56	39	13	3	3	29	3	73	1	327	34	4	402	44
14	3829	548	16	51	37	24	2	1	26	4	67	2	358	29	3	389	51
21	3938	549	20	57	45	11	0	3	27	4	67	2	364	42	4	454	53
28	4216	565	17	50	34	18	1	1	15	5	105	7	407	41	5	454	64
Avril-April 4	4270	552	15	62	40	15	0	0	18	1	146	5	414	39	4	491	53
11	4118	564	27	42	32	24	2	2	27	6	135	3	446	36	4	444	56
18	4063	522	25	64	45	12	0	1	29	3	124	2	404	34	2	448	43
25	3858	493	15	50	38	15	1	1	13	1	99	0	353	37	5	455	58
Mai-May 2	3753	503	22	49	32	12	3	0	23	3	73	2	306	30	3	477	61
9	3740	500	22	63	41	11	0	1	23	6	66	2	309	26	3	424	53
16	3615	486	25	44	30	12	0	1	19	5	55	3	276	18	2	406	41
23	3603	478	14	44	35	13	1	0	17	1	36	3	265	27	0	423	49
30	3617	463	24	72	47	19	1	0	21	6	34	6	251	26	7	405	55
Juin-June 6	3328	430	15	62	42	15	7	3	15	7	34	4	213	20	3	396	48
13	3444	409	15	85	65	8	2	1	12	7	27	3	212	25	1	405	47
20	3400	427	13	80	62	7	4	0	10	9	28	1	234	25	4	362	41
27	3240	414	17	66	39	9	1	1	19	6	11	3	192	32	7	391	44
Juillet-July 4	3344	428	16	73	49	6	4	1	18	4	20	3	230	24	3	376	45
11	3195	418	27	74	46	10	2	0	11	10	21	3	226	24	7	349	43
18	3352	456	22	85	56	6	5	2	21	10	22	5	230	34	4	342	41
25	3649	553	16	140	103	1	9	0	22	15	15	4	237	33	1	356	49
Août-August 1	3479	515	17	166	105	7	7	1	15	11	23	1	193	40	1	355	38
8	3261	483	14	150	117	10	6	2	16	10	13	3	175	27	2	352	38
15	3356	545	17	140	95	8	6	0	23	14	8	1	196	25	5	339	39
22	3247	484	26	137	88	10	13	0	11	12	17	3	179	31	9	308	29
29	3329	499	19	145	110	6	18	2	23	12	10	1	178	17	3	314	39
Septemb.-Septemb. 5	3155	478	25	134	97	12	18	1	18	17	15	3	153	16	4	339	36
12	3302	458	22	88	70	16	9	1	18	7	16	3	183	16	7	325	26
19	3340	422	14	87	71	14	4	0	28	13	17	1	199	25	1	328	27
26	3435	402	13	67	47	9	9	2	19	11	24	1	216	24	8	341	33
Octobre-October 3	3312	411	21	76	55	18	3	0	18	8	31	3	213	25	5	319	29
10	3419	463	15	54	39	13	6	1	23	9	24	1	245	20	4	349	33
17	3622	453	12	73	56	16	3	0	21	5	32	1	276	21	6	325	27
24	3659	450	9	67	48	13	1	1	21	4	43	3	305	25	6	357	33
31	3593	472	9	51	42	18	2	1	24	9	31	1	288	22	4	313	36
Novemb.-Novemb. 7	3536	462	19	54	37	7	2	0	31	10	43	5	300	20	9	285	18
14	3541	394	12	46	38	21	4	1	21	7	31	2	281	23	4	341	29
21	3711	450	16	51	35	9	0	3	13	5	42	4	287	26	10	360	33
28	3990	485	20	57	44	11	0	0	24	3	52	3	326	20	3	367	29
Décemb.-Decemb. 5	3855	446	16	45	32	14	0	1	17	7	39	1	335	32	5	341	33
12	4329	505	21	53	34	13	0	2	14	4	49	1	426	28	8	422	33
19	4025	478	20	61	33	18	3	1	19	1	55	2	359	34	7	327	29
26	3782	499	13	56	35	14	2	1	15	6	51	3	363	33	4	379	33
1926 Janv.-Jan. 2	4048	584	22	63	45	26	1	1	22	3	48	2	360	32	9	346	33

* Les données pour la ville de Berlin non comprises. — Excluding data for city of Berlin.

VILLES D'ALLEMAGNE *(suite)*. — GERMAN TOWNS *(continued)*.

Source: VERÖFFENTLICHUNGEN DES REICHSGESUNDHEITSAMTS.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée Total Diarrhœa	Diarrhée et entérite jusqu'à 1 an Diarrhœa and enteritis up to 1 year	Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalitis lethargica	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Rougeole et Rubéole Measles and German measles	Scarlatine Scarlet fever	Pneumonie Pneumonia	Tuberculose total Tuberculosis	Tuberculose, de 0 à 15 ans Tuberculosis, up to 15 years
BERLIN (Population: 4 014 000. R. 16. juin. 1925.)																	
Total 1919 *a* .	31307	3663	254	1002	760	311	—	—	383	46	—	—	100	73	—	5197	—
» 1920 *a* .	30982	5279	204	1438	1204	225	—	—	455	39	—	—	120	61	—	3411	—
» 1921. .	46989	6635	260	1405	*a* 662	282	—	—	591	45	585	—	200	90	3644	5737	—
» 1922. .	52984	6411	339	973	777	227	98	—	626	54	1891	60	439	60	4373	6523	—
» 1923. .	49832	4789	217	958	645	156	135	—	559	40	785	37	344	32	3138	7252	—
» 1924. .	47821	3922	166	678	456	119	109	—	475	43	988	36	14	41	2798	5860	—
» 1925. .	46345	4375	154	630	465	130	23	48	256	42	657	19	184	41	3060	4867	370
Janvier — January 24	3674	347	10	41	22	14	1	8	23	2	57	4	7	1	274	378	28
Février — February 21	3745	424	9	34	17	11	0	8	28	2	73	0	25	4	306	383	22
Mars — March 21	3737	373	7	35	26	9	3	5	34	1	61	1	20	1	272	408	47
Avril — April 18	4066	404	19	48	36	8	0	2	16	1	181	0	22	6	367	423	29
Mai — May 16	3525	347	18	33	25	11	0	3	13	0	80	0	15	2	241	388	34
Juin — June 13	3340	320	15	40	29	10	2	4	16	1	22	2	11	3	189	421	33
Juillet — July 11	2996	300	12	56	42	9	2	1	9	5	9	3	11	6	155	314	37
Août — August 8	3300	321	12	84	68	7	5	3	20	12	9	1	13	4	185	341	23
Septemb. — September 5	3016	265	11	65	42	8	4	3	11	8	8	1	8	2	140	334	25
Octobre — October 3	3242	263	9	41	30	6	5	2	17	2	25	0	15	4	180	309	16
Octobre — October 31	3509	308	8	48	39	11	0	2	21	3	31	2	11	2	225	329	21
Novemb. — November 28	3536	318	4	60	57	6	1	3	22	3	41	4	14	1	225	330	23
Décemb. — December 26	3682	282	15	36	27	14	0	4	19	2	49	1	10	4	237	436	23
1926 Janvier — January 2*	977	103	5	9	5	6	0	0	7	0	11	0	2	1	64	73	9
BRESLAU (Population: 555 000. R. 16. juin. 1925.)																	
Total 1919. .	10378	1550	114	407	313	91	—	—	33	20	—	—	1	31	—	1985	—
» 1920. .	9639	2184	61	633	579	73	—	—	30	25	—	—	21	18	—	1113	—
» 1921. .	9006	2254	73	630	568	77	19	—	29	18	236	6	34	7	867	943	—
» 1922. .	9230	2073	71	297	242	55	9	—	30	6	230	15	34	10	891	1098	—
» 1923. .	8725	1651	49	497	403	46	21	—	38	9	201	14	82	5	761	1135	—
» 1924. .	7754	1234	75	295	230	32	19	—	31	7	167	7	6	5	693	789	—
» 1925. .	7405	1113	47	224	161	35	5	0	30	8	167	4	67	9	506	729	85
Janvier — January 24	589	86	4	13	10	4	0	0	2	0	27	0	1	0	50	52	3
Février — February 21	562	103	4	11	8	4	1	0	3	0	19	0	5	3	52	53	11
Mars — March 21	585	99	7	15	12	3	1	0	3	0	17	1	10	0	33	53	6
Avril — April 18	683	112	6	16	11	5	0	0	5	1	38	0	10	0	73	69	8
Mai — May 16	580	78	1	9	8	1	0	0	3	0	16	1	2	0	39	71	9
Juin — June 13	530	76	3	21	16	4	1	0	0	1	5	0	5	0	29	52	8
Juillet — July 11	521	82	6	18	12	2	0	0	2	0	9	0	13	2	30	60	10
Août — August 8	551	108	3	28	25	1	1	0	2	0	4	1	9	0	34	44	6
Septem. — September 5	472	75	6	30	21	1	0	0	3	0	0	0	1	1	22	49	4
Octobre — October 3	507	74	2	23	15	3	1	0	2	1	1	0	3	0	23	52	4
Octobre — October 31	538	68	1	9	8	4	0	0	3	4	10	0	1	0	42	46	6
Novemb. — November 28	511	65	2	10	9	0	0	0	0	0	0	1	0	0	34	46	4
Décemb. — December 26	621	70	1	17	4	2	0	0	1	1	9	0	6	2	36	72	3
1926 Janvier — January 2*	155	17	1	4	2	1	0	0	1	0	2	0	1	1	9	10	3
COLOGNE (Population: 727 000. R. 16. juin. 1925.)																	
Total 1919. .	9564	1702	119	406	318	184	—	—	70	26	—	—	17	18	—	1760	—
» 1920. .	9266	2310	171	561	499	109	—	—	97	17	—	—	108	14	—	1245	—
» 1921. .	8805	2187	45	502	437	91	49	—	76	21	198	5	79	22	945	1197	—
» 1922. .	8914	1907	164	230	153	58	17	—	68	23	293	8	124	11	998	1181	—
» 1923. .	8591	1806	107	312	247	91	41	—	60	15	180	8	144	14	814	1359	—
» 1924. .	7903	1294	130	200	158	69	4	—	55	16	157	5	—	10	668	980	—
» 1925. .	7855	1355	86	238	203	59	12	2	42	11	134	5	74	12	746	883	122
Janvier — January 24	605	117	6	17	13	8	0	0	10	0	17	0	0	1	58	79	9
Février — February 21	599	97	4	14	10	5	0	1	3	0	16	1	0	1	51	62	14
Mars — March 21	647	112	5	15	14	3	0	1	3	1	8	0	1	0	78	68	8
Avril — April 18	638	105	10	8	5	4	0	0	10	1	18	0	4	1	78	87	14
Mai — May 16	575	92	8	9	7	6	1	0	3	1	6	1	2	1	53	79	18
Juin — June 13	560	87	5	13	12	5	1	0	3	0	5	0	5	1	31	64	10
Juillet — July 11	539	93	5	18	17	1	1	0	2	0	4	0	8	2	44	76	12
Août — August 8	547	94	7	28	25	1	3	0	3	1	5	1	7	1	41	68	11
Septem. — September 5	532	103	4	35	29	5	3	0	2	3	4	1	13	2	33	63	10
Octobre — October 3	530	95	8	31	27	7	2	0	0	2	3	0	6	0	30	60	5
Octobre — October 31	562	99	5	19	16	3	1	0	0	1	10	0	12	1	61	53	3
Novem. — November 28	653	108	12	10	9	5	0	0	2	0	21	1	9	0	72	59	5
Décemb. — December 26	700	119	6	11	10	4	0	0	1	1	15	0	7	1	98	51	2
1926 Janvier — January 2*	168	34	1	10	9	2	0	0	0	0	2	0	0	0	18	14	1

* Une semaine seulement. — One week only.
a Vieux Berlin seulement. — Old Berlin only.

VILLES D'ALLEMAGNE *(suite)*. — GERMAN TOWNS *(continued)*.

Source: VERÖFFENTLICHUNGEN DES REICHSGESUNDHEITSAMTS.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée Total Diarrhoea	Diarrhée et entérite jusqu'à 1 an Diarrhoea and enteritis up to 1 year	Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalitis lethargica	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Rougeole et rubéole Measles and German measles	Scarlatine Scarlet fever	Pneumonie Pneumonia	Tuberculose total Tuberculosis	Tuberculose de 0 à 15 ans Tuberculosis up to 15 years
DRESDE — DRESDEN (Population: 619 000. R. 16. juin. 1925.)																	
Total 1919.	8468	761	27	241	133	63	—	—	42	22	—	—	6	14	—	1474	—
» 1920.	7627	1186	36	336	253	50	—	—	84	13	—	—	5	17	—	833	—
» 1921.	7472	1272	26	281	231	40	24	—	74	10	126	2	26	19	544	899	—
» 1922.	8096	1141	62	151	100	35	17	—	62	10	323	3	41	10	673	999	—
» 1923.	7830	895	33	179	97	37	9	—	80	17	190	7	25	9	553	1056	—
» 1924.	7298	712	30	125	73	14	4	—	55	10	120	9	3	4	539	833	—
» 1925.	6987	722	27	118	65	16	2	0	45	2	88	2	31	3	451	759	55
Janvier — January 24	558	50	1	3	0	3	0	0	2	0	14	1	3	0	33	48	7
Février — February 21	574	62	1	8	3	2	0	0	1	0	8	0	8	0	40	68	5
Mars — March 21	546	58	2	8	5	3	0	0	1	0	9	0	7	0	42	71	2
Avril — April 18	604	65	0	7	2	2	1	0	2	0	15	0	2	1	46	74	2
Mai — May 16	528	64	2	8	5	0	0	0	3	0	6	0	7	0	39	62	4
Juin — June 13	493	48	2	6	5	1	0	0	0	1	2	0	0	0	36	66	2
Juillet — July 11	479	43	0	7	3	0	0	0	2	1	3	0	2	0	34	47	5
Août — August 8	477	49	1	16	12	1	0	0	6	0	2	1	0	0	26	52	2
Septemb. — September 5	452	57	1	14	8	0	0	0	4	0	1	0	0	1	15	34	1
Octobre — October 3	489	46	4	8	5	0	1	0	7	0	7	0	0	0	15	51	6
Octobre — October 31	514	38	3	8	3	1	0	0	7	0	3	0	0	0	30	62	5
Novembre November 28	548	59	1	13	9	2	0	0	7	0	2	0	0	1	37	59	4
Décemb. — December 26	556	57	6	10	3	1	0	0	1	0	12	0	1	0	49	52	3
1926 Janvier — January 2*	169	26	3	2	2	0	0	0	2	0	4	0	1	0	9	13	0
HAMBOURG — HAMBURG (Population: 1 079 000. R. 16. juin. 1925.)																	
Total 1919.	14215	1434	60	317	215	223	—	—	196	18	—	—	55	48	—	2140	—
» 1920.	13986	2111	90	433	344	135	—	—	214	39	—	—	53	38	—	1533	—
» 1921.	12516	1759	63	361	302	90	8	—	217	20	286	6	50	28	1219	1364	—
» 1922.	14022	1762	63	285	227	75	10	—	219	12	366	51	11	33	1641	1476	—
» 1923.	13363	1507	34	217	150	49	3	—	227	15	119	41	154	20	1357	1652	—
» 1924.	12597	1271	34	181	129	33	7	—	213	19	129	19	1	2	1167	1439	—
» 1925.	12581	1300	42	167	115	37	22	1	143	38	106	12	6	2	1312	1234	81
Janvier — January 24	1102	102	0	19	12	6	3	1	16	0	8	1	0	0	120	111	12
Février — February 21	937	99	5	13	5	8	0	0	10	4	3	4	0	0	93	107	7
Mars — March 21	906	110	4	10	7	4	0	0	12	0	8	2	3	0	105	106	5
Avril — April 18	1134	136	6	6	6	0	0	0	17	1	29	1	0	0	148	116	7
Mai — May 16	996	121	9	15	12	1	0	0	6	2	16	0	1	0	127	118	5
Juin — June 13	903	84	5	10	6	4	3	0	9	2	11	1	1	0	91	91	8
Juillet — July 11	877	82	4	14	11	2	2	0	11	6	8	0	1	0	78	89	11
Août — August 8	894	95	0	23	16	0	1	0	10	11	3	2	0	0	78	59	4
Septemb. — September 5	802	94	9	18	11	2	7	0	4	4	0	0	0	1	50	72	8
Octobre — October 3	872	87	0	14	13	2	2	0	12	3	4	0	0	0	85	83	1
Octobre — October 31	923	81	0	10	7	3	3	0	16	2	4	0	0	1	83	93	3
Novem. — November 28	979	100	0	4	3	5	1	0	14	3	5	0	0	0	105	80	6
Décem. — December 26	1030	84	0	10	5	0	0	0	4	0	5	1	0	0	116	89	4
1926 Janvier — January 2*	226	25	0	1	1	0	0	0	2	0	2	0	0	0	33	20	0
MUNICH (Population: 681 000 R. 16. juin. 1925.)																	
Total 1919.	10422	1517	26	432	343	43	—	—	70	6	—	—	78	5	—	1421	—
» 1920.	9442	1784	45	464	393	52	—	—	81	3	—	—	77	9	—	1179	—
» 1921.	8906	1515	53	382	324	51	21	—	61	5	199	4	113	10	581	1035	—
» 1922.	8857	1397	48	261	208	24	12	—	46	2	187	2	9	6	601	1029	—
» 1923.	9137	1320	36	269	202	31	1	—	23	5	159	1	141	7	612	1185	—
» 1924.	8729	1281	22	231	194	39	4	—	28	9	140	1	38	4	599	854	—
» 1925.	9008	1070	54	149	102	29	2	1	25	8	116	3	90	7	667	800	58
Janvier — January 24	764	85	4	15	12	4	0	1	2	1	21	0	13	1	61	64	3
Février — February 21	692	102	6	20	11	2	0	0	2	2	13	0	9	1	57	65	4
Mars — March 21	746	100	2	10	7	3	0	0	0	0	10	0	19	0	75	59	6
Avril — April 18	824	90	2	7	4	3	0	0	3	0	19	2	16	2	87	87	8
Mai — May 16	725	92	1	15	9	3	0	0	3	0	20	0	15	0	48	70	7
Juin — June 13	613	79	4	11	9	2	0	0	2	0	6	1	7	0	35	56	8
Juillet — July 11	661	81	1	13	10	2	0	0	0	1	2	0	1	0	54	65	2
Août — August 8	596	86	5	16	12	0	1	0	1	0	5	0	6	0	37	66	5
Septemb. — September 5	575	69	7	6	4	1	0	0	1	0	2	0	2	0	35	50	5
Octobre — October 3	587	60	1	13	12	2	0	0	7	2	1	0	1	1	30	52	5
Octobre — October 31	688	51	4	8	5	5	1	0	0	2	5	0	0	1	35	51	3
Novemb. — November 28	684	79	8	7	3	0	0	0	4	0	8	0	1	1	46	54	1
Décemb. — December 26	660	75	8	6	3	1	0	0	0	0	3	0	0	0	48	44	1
1926 Janvier — January 2*	193	21	1	2	1	1	0	0	0	0	1	0	0	0	19	17	0

* Une semaine seulement. — One week only.

VILLES DES ILES BRITANNIQUES — TOWNS IN THE BRITISH ISLES.

105 GRANDES VILLES D'ANGLETERRE ET DU PAYS DE GALLES — 105 LARGE TOWNS OF ENGLAND AND WALES

(Population: 19 474 270. E. 30. juin. 1925.)

Source: WEEKLY RETURN OF BIRTHS AND DEATHS, issued by the Registrar-General.

Semaine se terminant le: / Week ending:			Décès, toutes causes / Deaths, all causes	Décès jusqu'à 1 an / Deaths up to 1 year	Coqueluche / Whooping-cough	Diarrhée et entérite, 0-2 ans / Diarrhœa and enteritis, 0-2 years	Diphtérie / Diphtheria	Fièvre typhoïde / Enteric fever	Grippe / Influenza	Rougeole / Measles	Scarlatine / Scarlet fever
	Total	1919 *	249382	33133	1257	4378	2522	249	21714	2305	744
	»	1920 *	230976	41381	2601	5056	3030	213	5665	4049	816
	»	1921 *	225283	37370	2420	8274	2770	244	4170	1475	779
	»	1922	246883	33201	3660	3090	2557	185	10614	4268	888
	»	1923	221161	28384	2249	3885	1676	159	4147	2892	579
	»	1924	241034	30459	2393	3491	1539	212	8790	3558	525
	»	1925	236692	28707	3564	3952	1681	183	5772	3238	586
Janvier	January	10	4984	647	61	53	47	7	124	79	23
		17	5609	638	87	41	49	6	142	57	13
		24	5197	613	94	42	42	2	195	62	9
		31	5398	664	138	39	50	7	202	62	15
Février	February	7	5497	648	133	44	50	4	291	73	17
		14	5514	649	133	48	42	6	354	65	11
		21	5468	626	130	56	35	3	352	76	11
		28	5626	640	120	30	39	4	346	98	18
Mars	March	7	5536	622	108	36	40	1	361	111	11
		14	5405	621	104	44	47	1	283	100	17
		21	5661	624	155	41	39	5	304	127	11
		28	5303	604	140	40	28	1	281	130	10
Avril	April	4	5494	629	117	44	30	5	242	125	11
		11	5232	616	125	39	36	4	221	143	17
		18	4911	604	114	38	27	3	162	134	13
		25	4683	552	110	43	40	4	139	122	7
Mai	May	2	4430	542	93	36	25	1	100	103	11
		9	4603	561	118	39	31	2	68	86	11
		16	4283	526	88	31	25	3	58	83	13
		23	4184	487	87	40	22	2	62	105	16
		30	4014	475	71	46	27	2	48	76	14
Juin	June	6	3687	424	62	32	32	1	42	62	16
		13	3965	448	78	53	27	4	36	61	13
		20	3672	403	62	46	21	3	32	61	12
		27	3506	395	58	45	24	3	23	63	9
Juillet	July	4	3612	395	65	29	21	6	30	54	10
		11	3487	379	63	44	25	2	13	36	9
		18	3632	400	78	50	20	5	18	18	8
		25	3494	413	39	64	29	6	22	44	8
Août	August	1	3375	423	35	101	18	3	16	27	9
		8	3319	411	28	110	20	3	18	22	8
		15	3384	422	37	136	13	5	23	19	13
		22	3473	520	44	177	20	3	20	31	9
		29	3552	565	40	218	27	1	12	20	5
Septembre	September	5	3386	551	28	231	18	5	11	22	5
		12	3655	545	31	218	30	4	11	7	3
		19	3827	589	40	219	35	3	26	12	9
		26	3958	534	32	173	24	3	41	14	3
Octobre	October	3	3936	519	28	129	23	4	51	23	12
		10	3731	454	20	109	28	4	57	14	8
		17	3966	453	29	92	28	4	47	26	17
		24	4173	529	15	123	38	4	41	25	11
		31	3928	499	12	68	31	5	54	30	8
Novembre	November	7	3885	536	11	76	31	3	59	31	14
		14	3961	508	29	62	28	6	44	34	5
		21	5112	632	30	87	29	3	61	49	13
		28	5481	665	40	71	54	3	73	50	11
Décembre	December	5	6057	712	32	67	59	1	100	58	11
		12	6631	715	44	63	38	7	116	71	17
		19	6080	692	48	50	30	1	132	78	10
		26	5099	613	36	57	36	1	85	72	11
1926 Janvier	January	2	6636	775	44	82	53	4	123	87	10

		1919	1920	1921	1922	1923	1924	1925
Typhus exanthém.	Typhus	0	0	0	0	0	4	0
Variole	Smallpox	12	20	1	21	7	6	4

* Les totaux pour les années 1919–1921 sont pour 96 villes. — Totals for the years 1919–1921 are for 96 towns.

VILLES DES ILES BRITANNIQUES *(suite)*. — TOWNS IN THE BRITISH ISLES *(continued)*.

BELFAST

(Population: 438 000. E. 30. juin. 1925.)

Sources: Weekly Return of Births and Deaths in seven of the Principal Towns in Northern Ireland, 1925.
Quarterly Return of Births, Deaths and Marriages in England and Wales, 1919-1925.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrh. & enteritis under 2 years	Diphtérie Diphtheria	Fièvre typhoïde Enteric fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis,
Total 1919	7278	1179	9	180	30	17	—	—	137	138	1122	
» 1920	7234	1602	84	199	45	34	243	—	132	94	978	
» 1921	6045	1265	222	246	31	15	52	—	17	11	855	
» 1922	6304	998	16	127	43	7	241	—	33	12	778	
» 1923	5910	1089	182	130	24	4	100	—	125	26	737	
» 1924	6329	1137	89	154	23	3	139	—	83	57	773	
» 1925*	6131	1069	99	203	38	18	84	523	167	49	752	
Janvier — January 24	577	119	17	8	3	0	10	78	1	10	49	19
Février — February 21	606	111	19	15	4	2	20	66	1	6	61	7
Mars — March 21	551	94	16	14	3	1	14	57	0	6	58	15
Avril — April 18	494	61	15	5	2	11	10	29	2	6	67	14
Mai — May 16	459	73	15	9	6	1	3	28	0	6	39	21
Juin — June 13	406	69	8	9	4	0	6	17	2	1	47	13
Juillet — July 11	376	59	2	8	1	0	2	21	1	3	39	18
Août — August 8	345	49	1	12	4	0	1	12	2	4	39	13
Septembre — September 5	405	93	2	61	2	0	2	16	0	2	41	16
Octobre — October 3	339	62	3	23	1	1	4	16	0	1	26	8
Octobre — October 31	389	74	0	20	0	1	2	30	7	3	31	7
Novembre — November 28	449	64	2	9	4	0	8	38	37	3	42	15
Décembre — December 26	711	161	2	11	5	1	2	115	86	1	44	12
1926 Janvier — January 2*	174	25	1	3	0	0	0	24	28	0	10	3

		1919	1920	1921	1922	1923	1924	1925
Encéphal. léthargique	Encephal. lethar.	—	—	—	—	3	30	7
Typhus exanthém.	Typhus	1	9	3	0	0	0	0

* Total pour l'année civile. — Total for calendar year.
** Une semaine seulement. — One week only.

Sources: The Registrar-General's Statistical Review, 1919-1924.
Weekly Return of Births and Deaths, issued by the Registrar-General, 1925.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrhœa and enteritis under 2 years	Diphtérie Diphtheria	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Rougeole Measles	Scarlatine Scarlet fever
BIRMINGHAM (Population : 945 900. E. 30. juin. 1925.)									
Total 1919	11822	1595	57	188	127*	9	1055	187	44
» 1920	11475	2086	185	244	207*	1	421	146	111
» 1921	10393	1846	93	366	121	5	135	156	40
» 1922	11214	1708	355	170	89	3	444	79	36
» 1923	10290	1370	44	207	138	4	259	185	39
» 1924	11041	1504	185	165	99	5	373	79	23
» 1925	10929	1372	216	198	94	3	365	106	22
Janvier — January 31	863	126	21	12	11	1	12	2	2
Février — February 28	890	127	28	10	7	1	40	7	2
Mars — March 28	1162	127	42	8	8	0	113	9	3
Avril — April 25	1051	118	38	4	6	1	78	18	4
Mai — May 23	864	118	24	6	7	0	23	32	1
Juin — June 20	686	67	10	6	6	0	16	12	0
Juillet — July 18	675	92	17	8	3	0	7	8	1
Août — August 15	616	73	11	19	5	0	4	5	3
Septembre — September 12	685	131	10	44	12	0	4	5	1
Octobre — October 10	723	101	1	31	8	0	11	0	1
Novembre — November 7	729	79	3	17	8	0	12	1	1
Décembre — December 5	871	89	5	16	7	0	19	4	0
1926: Janvier — January 2	1114	124	6	17	6	0	26	3	3

* Y compris le croup. — Includes "croup", if any.

VILLES DES ILES BRITANNIQUES *(suite)*. — CITIES IN THE BRITISH ISLES *(continued)*.

DUBLIN

(Population: 438 000. E. 30. juin. 1925.)

Sources: Quarterly Reports of Births and Deaths in England and Wales, 1919-1924.
Weekly Return of Births and Deaths in relation to the Dublin Registration Area, 1925.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrh. & enteritis under 2 years	Diphtérie Diphtheria	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	8595	1359	26	297	25	10	833	891	35	28	869	314
» 1920	7509	1594	245	268	52	11	82	761	111	16	738	251
» 1921	6799	1337	23	430	55	9	97	578	44	12	711	197
» 1922	7242	1204	54	181	37	9	202	761	180	19	677	205
» 1923	6218	1146	152	229	25	14	48	468	15	21	612	193
» 1924	6984	1281	24	248	43	8	294	771	115	19	614	148
» 1925 **	6737	1193	114	303	45	9	110	639	118	31	631	183
Janvier — January 24	546	84	9	12	3	0	9	62	0	2	46	9
Février — February 21	675	97	9	15	4	1	39	67	0	2	74	19
Mars — March 21	602	103	12	12	2	0	22	63	3	1	57	20
Avril — April 18	591	108	22	20	3	1	15	80	5	4	53	20
Mai — May 16	523	96	24	10	2	0	4	57	14	2	61	15
Juin — June 13	492	75	11	9	6	0	3	44	28	5	56	19
Juillet — July 11	425	66	13	13	1	0	3	37	18	1	45	12
Août — August 8	428	109	6	42	4	1	0	25	17	2	27	10
Septembre — September 5	489	146	5	76	1	0	2	27	16	0	43	8
Octobre — October 3	449	109	3	46	1	0	0	26	1	3	42	14
Octobre — October 31	421	63	3	22	3	4	4	29	6	2	34	13
Novembre — November 28	497	60	1	14	3	1	3	40	5	1	56	14
Décembre — December 26	554	77	2	10	7	1	5	71	3	4	40	8
1926 Janvier — January *2	187	21	0	3	5	0	3	28	2	2	12	6

		1919	1920	1921	1922	1923	1924	1925
Typhus exanthém.	Typhus	0	10	0	0	0	0	0

** Une semaine seulement. — One week only.
* Pour 52 semaines, se terminant le 2 janvier 1926. — For 52 weeks ending January 2nd, 1926.

GLASGOW

(Population : 1 057 100. E. 30. juin. 1925.)

Sources: Annual Report of the Registrar-General, 1919-1925.
Monthly Return of the Births, Deaths and Marriages in the Principal Towns of Scotland.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrhœa and enteritis under 2 years	Diphtérie Diphtheria	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Méningite cérébro-spin. Cerebro-spin. meningitis	Rougeole Measles	Scarlatine Scarlet fever
Total 1919	18237	2937	630	341	164	16	1805	45	328	49
» 1920	16765	3477	145	360	164	30	324	56	310	58
» 1921	15623	3138	689	555	128	17	208	53	110	54
» 1922	17848	3401	202	285	139	12	797	52	1292	74
» 1923	14875	2392	370	261	144	13	64	53	568	74
» 1924	16874	3007	648	284	138	4	420	42	519	82
» 1925	15295	2588	588	274	119	13	206	38	118	70
Janvier — January	1446	256	87	15	17	3	41	3	0	4
Février — February	1240	191	62	11	12	0	29	1	0	8
Mars — March	1354	213	75	14	15	1	25	6	1	9
Avril — April	1294	228	78	18	5	2	9	1	1	9
Mai — May	1155	201	82	15	8	0	5	2	4	3
Juin — June	1128	175	69	24	11	0	9	3	2	7
Juillet — July	1058	185	42	30	1	1	5	2	5	4
Août — August	1024	167	33	50	7	1	7	7	1	4
Septembre — September	1010	170	13	35	5	2	6	0	0	5
Octobre — October	1175	235	7	28	8	1	13	3	7	6
Novembre — November	1569	283	11	14	17	1	28	5	33	5
Décembre — December	1839	284	29	20	13	1	29	5	64	6

		1919	1920	1921	1922	1923	1924	1925
Typhus exanthém.	Typhus	7	2	1	5	1	0	0
Variole	Smallpox	0	112	8	0	0	0	0

* Période d'une semaine — One week period.

VILLES DES ILES BRITANNIQUES *(suite)*. — CITIES IN THE BRITISH ISLES *(continued)*.

LIVERPOOL

(Population : 856 000. E. 30. juin. 1925.)

Période de quatre semaines se terminant le: / Four-week period ending	Décès, toutes causes / Deaths, all causes	Décès de 0 à 1 an / Deaths up to 1 year	Coqueluche / Whooping-cough	Diarrhée et entérite jusqu'à 2 ans / Diarrhœa and enteritis under 2 years	Diphtérie / Diphtheria	Fièvres typhoïde et paratyphoïde / Enteric fever	Grippe / Influenza	Rougeole / Measles	Scarlatine / Scarlet fever
Total 1919	13182	2043	51	299	212*	6	1208	101	74
» 1920	12891	2840	229	452	186*	8	207	386	70
» 1921	11707	2354	210	699	97	8	105	327	45
» 1922	12035	2062	186	274	90	6	330	172	38
» 1923	11436	2065	156	358	82	6	114	360	41
» 1924	11424	2117	174	311	70	7	189	144	63
» 1925	11650	1904	230	410	104	4	180	395	94
Janvier — January 21	926	140	26	13	12	1	4	21	12
Février — February 28	1137	164	45	28	12	0	25	71	12
Mars — March 28	1216	197	33	14	8	0	67	106	7
Avril — April 25	1078	155	29	18	11	2	31	77	6
Mai — May 23	904	152	23	15	2	0	11	44	11
Juin — June 20	778	129	16	12	6	0	2	37	7
Juillet — July 18	664	94	11	18	3	0	1	16	12
Août — August 15	655	116	6	47	2	0	3	8	6
Septembre — September 12	702	169	9	93	5	0	0	4	2
Octobre — October 10	711	118	6	65	5	0	3	4	5
Novembre — November 7	688	102	4	35	6	0	5	0	6
Décembre — December 5	1017	158	7	31	17	0	13	2	3
1926: Janvier — January 2	1174	210	15	21	15	1	15	5	5

LONDRES — LONDON

(Population : 4 602 000 [1]. E. 30. juin. 1925.)

Sources: The Registrar-General's Statistical Review, 1919-1924.
Weekly Return of Births and Deaths, issued by the Registrar-General, 1925.

Période de quatre semaines se terminant le: / Four-week period ending	Décès, toutes causes / Deaths, all causes	Décès de 0 à 1 an / Deaths up to 1 year	Coqueluche / Whooping-cough	Diarrhée et entér. jusqu'à 2 ans / Diarrhœa & enteritis under 2 years	Diphtérie / Diphtheria	Encéphalite léthargique / Encephalitis lethargica	Erysipèle / Erysipelas	Fièvre puerpérale / Puerperal fever	Fièvres typhoïde et paratyphoïde / Enteric fever	Grippe / Influenza	Méningite cérébro-spinale / Cerebro-spinal meningitis	Pneumonie et broncho-pneum. / Pneumonia	Poliomyélite aiguë et polioencéphalite / Acute poliomyelitis & polio-encephalit.	Rougeole / Measles	Scarlatine / Scarlet fever	Tuberculose pulmonaire / Pulmonary tuberculosis	Tuberculose, autres formes / Tuberculosis,
Total 1919	59114	7039	212	1368	775*	—	128	155	63	4259	126	4630	—	353	147	5197	112
» 1920	57232	9141	771	1156	1023*	—	133	215	48	1364	109	5315	—	1016	207	4675	107
» 1921	56259	8077	546	2152	1150	74	117	142	60	1024	80	4901	18	244	292	4813	96
» 1922	61221	7089	1128	676	1145	50	101	129	45	2600	67	6578	14	1563	301	4888	93
» 1923	51991	5615	432	946	616	52	75	126	42	764	55	4334	15	386	116	4432	85
» 1924	55887	5904	517	743	565	149	95	106	53	1680	61	5294	21	1330	130	4486	83
» 1925	53594	5536	855	875	481	117	116	107	48	1055	80	4735	14	357	100	4181	75
Janvier — January 31	5017	482	139	34	50	11	10	12	7	151	6	509	1	1	10	385	6
Février — February 28	5206	508	184	43	50	7	9	7	5	320	9	526	2	5	6	386	7
Mars — March 28	4676	492	138	43	48	4	10	9	1	169	3	376	3	4	5	362	7
Avril — April 25	4228	420	121	26	32	9	13	9	5	103	8	385	2	5	10	354	7
Mai — May 23	3656	382	97	26	28	11	8	9	0	41	13	308	1	17	11	297	7
Juin — June 20	3263	254	52	32	31	16	12	7	2	24	8	205	1	12	11	284	5
Juillet — July 18	3158	268	45	32	23	12	4	11	1	9	2	184	0	18	7	273	7
Août — August 15	3050	285	19	62	25	3	9	6	7	13	5	155	0	9	5	281	5
Septemb.— September 12	3159	394	24	148	26	10	8	3	3	5	3	155	0	15	2	251	3
Octobre — October 10	3490	447	14	174	29	9	5	7	5	33	9	238	0	16	7	253	4
Novemb.— November 7	3798	455	5	101	33	7	7	12	5	42	2	304	1	38	7	312	4
Décemb.— December 5	4824	579	9	87	55	8	7	6	2	56	3	578	1	84	10	365	3
1926: Janvier — January 2 [1]	6069	570	8	67	51	10	14	9	5	89	9	812	2	133	9	378	4

[1] Population civile. — Adjusted by the exclusion of non-civilians.
* Y compris le croup. — Includes "croup", if any.

VILLES D'ESPAGNE — SPANISH TOWNS

ources: Anuario Estadístico de España, 1919–1920–1921.
Anuario de la Inspección General de Sanidad, 1922. Anuario de la Dirección General de Sanidad, 1923.
Boletín Demográfica de España, 1924–25.
Estadística de Mortalidad del Ayuntamiento de Madrid, 1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 yr.	Coqueluche Whooping-cough	Diarrhée et entér. jusqu'à 2 ans Diarrhœa & enteritis under 2 years	Diphtérie Diphtheria	Fièvre typhoïde Enteric fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Septicémie puerpérale Puerperal septicæmia	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms	Variole Smallpox
49 VILLES — 49 CITIES (Population: 4 202 250. E. 30. juin. 1924)														
Total 1919	103786	—	247	7759	478	1403	4004	3039	409	135	317	10095	2460	854
» 1920	103011	—	596	8599	494	1679	2488	2459	1123	204	272	9880	2252	795
» 1921	92316	—	116	8712	479	1441	825	2111	641	140	309	8379	1883	722
» 1922	92579	16510	141	7514	482	1136	1156	2391	1084	102	303	8747	1721	598
» 1923	93419	17404	360	8169	434	1072	1196	2510	597	59	272	8539	1735	88
» 1924	89634	15867	223	7403	381	1034	877	2323	735	51	292	8462	1776	592
» 1925	91091	15607	245	7262	285	890	794	2135	803	57	279	8373	1754	359
Janvier — January . .	9223	1337	17	321	33	51	123	259	53	6	34	713	145	94
Février — February . .	8607	1225	19	278	32	53	162	255	73	3	25	779	143	44
Mars — March . . .	9091	1367	29	337	30	49	169	260	132	5	25	800	140	25
Avril — April	7719	1175	22	307	21	50	113	216	88	4	15	736	151	29
Mai — May	6872	1154	18	477	22	61	42	135	84	4	17	738	187	28
Juin — June . . .	6845	1428	34	848	8	50	22	112	104	2	22	685	191	26
Juillet — July	7427	1800	26	1361	11	86	15	106	89	4	21	717	156	16
Août — August . .	6948	1527	27	1106	18	91	13	90	41	1	19	639	125	17
Septembre — September .	6214	1149	18	796	19	140	15	109	23	1	20	632	133	28
Octobre — October . .	6476	1029	11	596	31	101	21	155	17	10	27	614	139	29
Novembre — November. .	7114	1038	12	446	28	77	39	186	44	7	23	624	135	15
Décembre — December .	8555	1326	10	389	34	81	58	252	55	6	31	696	109	8

	1919	1920	1921	1922	1923	1924	1925
Typhus exanthématique — Typhus	—	—	—	54	17	7	2

BARCELONE — BARCELONA (Population: 738 500. E. 30. juin. 1924.)

Total 1919	17685	—	24	1017	118	302	339	1002	29	14	34	1670	262	189
» 1920	16601	—	52	1065	102	262	244	691	120	9	25	1612	165	173
» 1921	14743	—	5	1071	113	237	46	504	44	5	16	1453	47	77
» 1922	15610	2073	16	930	117	308	82	733	100	4	15	1490	39	18
» 1923	16051	2257	13	991	126	276	90	851	98	4	15	1470	46	23
» 1924	15392	1845	7	918	85	327	82	739	109	2	25	1352	75	6
» 1925	15058	1837	18	974	73	168	71	466	106	3	25	1288	78	0
Janvier — January . .	1708	255	1	64	7	10	13	68	5	0	4	137	5	0
Février — February .	1432	179	0	53	4	11	10	52	9	1	4	105	10	0
Mars — March . . .	1594	163	3	52	11	15	10	73	11	0	5	120	7	0
Avril — April	1289	141	0	57	7	14	12	39	12	1	2	107	5	0
Mai — May	1124	155	1	83	7	16	2	34	23	0	2	83	10	0
Juin — June . . .	1150	208	6	150	2	6	2	25	21	1	2	81	12	0
Juillet — July	1081	183	1	184	2	17	0	21	19	0	2	126	7	0
Août — August . .	981	150	1	104	8	10	0	14	5	0	2	99	2	0
Septembre — September .	924	91	1	83	4	27	1	16	0	0	0	81	5	0
Octobre — October . .	1035	91	1	55	8	14	4	25	0	0	0	119	6	0
Novembre — November. .	1155	100	1	46	6	18	7	34	1	0	2	105	4	0
Décembre — December .	1585	121	2	43	7	10	10	65	0	0	0	125	5	0

MADRID (Population: 783 200. E. 31. déc. 1924.)

Total 1919	18281	—	68	881	94	203	1001	436	88	77	69	1895	577	91
» 1920	18148	—	234	995	97	390	501	348	296	48	42	1977	559	8
» 1921	16177	—	31	1296	80	261	212	355	136	72	77	1552	480	4
» 1922	16291	3044	10	1024	70	158	241	338	315	20	75	1607	409	1
» 1923	16279	3434	141	1226	50	131	217	367	77	19	58	1582	401	0
» 1924	15316	2740	24	938	53	125	150	316	184	28	73	1661	490	41
» 1925	15592	2835	68	867	30	92	149	362	81	16	67	1603	359	17
anvier — January . .	1685	254	4	40	4	3	32	50	2	2	8	141	30	9
évrier — February .	1544	226	6	24	3	12	45	36	0	0	6	182	44	4
lars — March . . .	1526	255	12	38	2	6	33	40	2	1	3	141	35	0
vril — April	1245	206	8	29	2	4	16	28	8	2	4	148	30	3
lai — May	1074	175	8	37	1	3	4	17	8	2	5	139	40	0
uin — June . . .	1112	240	10	109	1	7	0	14	13	0	6	140	43	1
uillet — July	1302	390	12	265	1	8	2	15	7	1	6	141	31	0
oût — August . .	1109	229	9	146	3	7	1	19	5	0	5	104	21	0
eptembre — September .	950	163	5	81	3	19	3	16	3	1	3	109	30	0
ctobre — October . .	1062	135	5	41	4	12	7	29	3	3	4	104	37	1
ovembre — November. .	1213	184	2	20	4	7	4	35	8	2	14	112	30	0
écembre — December .	1589	391	2	44	5	8	12	36	16	3	8	121	30	0

NOTE. — Les données mensuelles sont provisoires; les totaux annuels sont corrigés. — Monthly data provisional; the totals are corrected.

VILLES D'ESPAGNE *(suite)* — SPANISH TOWNS *(continued)*.

Sources: Anuario Estadístico de España, 1919–1920–1921.
Anuario de la Inspección General de Sanidad, 1922. Anuario de la Dirección General de Sanidad, 1923.
Boletín Demográfica de España, 1924–1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 yr.	Coqueluche Whooping-cough	Diarrhée et entér. jusqu'à 2 ans Diarrhœa & enteritis under 2 years	Diphtérie Diphtheria	Fièvre typhoïde Enteric fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Septicémie puerpérale Puerperal septicæmia	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms	Variole Smallpox
SÉVILLE — SEVILLE (Population: 210 950. E. 30. juin. 1924.)														
Total 1919	5915	—	18	387	22	90	211	158	2	0	18	883	147	6
» 1920	5811	—	7	513	20	94	174	130	77	1	13	879	186	0
» 1921	5328	—	15	421	27	81	116	137	13	3	14	712	154	7
» 1922	6046	1060	22	439	31	55	126	125	76	5	27	761	156	508
» 1923	5159	976	9	455	33	78	114	109	17	2	22	669	156	16
» 1924	5325	1195	21	587	30	68	93	100	47	1	17	729	194	0
» 1925	5242	865	34	421	29	73	94	93	16	3	24	680	177	1
Janvier — January . .	501	60	1	20	6	2	10	12	0	1	7	58	11	0
Février — February .	521	62	2	11	3	4	25	9	1	1	3	63	18	0
Mars — March . . .	470	68	2	18	5	3	20	9	1	0	1	47	6	0
Avril — April	442	73	8	16	1	3	15	16	1	0	0	51	13	0
Mai — May	443	99	2	52	1	10	9	6	0	0	0	56	20	0
Juin — June . . .	464	130	5	78	2	2	3	9	3	0	1	56	23	1
Juillet — July	460	102	3	68	1	8	1	5	3	0	2	69	17	0
Août — August . .	373	40	6	35	2	11	2	2	1	0	1	46	15	0
Septembre — September .	372	58	2	34	3	13	3	4	1	0	2	58	17	0
Octobre — October . .	389	53	0	32	3	5	1	8	0	0	3	55	13	0
Novembre — November. .	400	56	2	37	1	6	1	6	2	0	1	61	15	0
Décembre — December .	407	52	1	20	1	6	4	7	3	1	3	60	9	0
VALENCE — VALENCIA (Population: 260 330. E. 30. juin. 1924.)														
Total 1919	7040	—	8	286	28	132	338	226	35	3	23	560	97	279
» 1920	5902	—	4	332	26	151	117	113	24	6	21	521	102	62
» 1921	5116	—	9	315	21	144	31	108	10	6	27	419	105	4
» 1922	5425	731	13	304	17	97	71	107	41	6	18	433	67	0
» 1923	5427	591	5	232	14	71	107	121	2	1	10	411	64	39
» 1924	5332	660	9	283	17	109	85	109	32	2	13	407	71	42
» 1925	5457	702	3	300	15	106	96	114	45	2	9	380	87	0
Janvier — January . .	554	54	1	10	1	6	12	11	1	0	1	31	7	0
Février — February .	514	55	0	4	1	10	14	14	12	0	1	35	5	0
Mars — March . . .	619	68	0	15	3	5	25	16	12	0	0	43	7	0
Avril — April	527	81	0	16	1	5	15	13	7	0	1	29	5	0
Mai — May	446	62	1	28	1	7	2	7	1	0	0	40	9	0
Juin — June . . .	447	77	0	59	1	10	1	7	6	0	1	37	8	0
Juillet — July	408	73	1	63	0	9	3	4	4	1	1	30	14	0
Août — August . .	355	40	0	32	0	11	1	1	0	0	0	32	4	0
Septembre — September .	290	30	0	26	0	15	1	3	0	0	0	24	6	0
Octobre — October . .	336	41	0	18	2	14	1	7	0	0	1	22	5	0
Novembre — November. .	400	45	0	11	3	4	6	12	1	0	2	24	10	0
Décembre — December .	561	76	0	18	2	10	15	19	1	1	1	33	7	0

Note. — Les données mensuelles sont provisoires; les totaux annuels sont corrigés. — Monthly data are provisional; the totals ar corrected.

VILLES DE FRANCE — FRENCH TOWNS

LILLE

(Population: 200 952. R. 1921.)

Source: Bureau d'Hygiène. — Health Bureau.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrh. & enteritis under 2 years	Diphtérie Diphtheria	Fièvre typhoïde Enteric fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	3703	330	0	86	49	7	131	206	59	64	348	93
» 1920	3551	643	16	209	24	23	56	289	15	5	301	78
» 1921	3362	496	6	197	7	7	17	227	3	0	319	86
» 1922	4027	547	39	122	12	6	90	346	30	0	433	73
» 1923	3557	512	23	193	8	8	23	192	25	1	342	72
» 1924	3698	404	8	97	16	9	37	233	1	1	392	97
» 1925	3830	416	13	154	17	13	39	231	13	17	434	94
Janvier — January	314	45	1	6	0	0	6	30	2	1	33	5
Février — February	305	32	0	9	0	1	2	25	2	3	35	8
Mars — March	380	36	2	4	2	0	2	28	2	2	52	8
Avril — April	340	28	0	8	3	1	3	31	2	3	44	8
Mai — May	330	34	1	16	2	1	2	14	2	0	50	10
Juin — June	296	28	2	8	0	4	4	21	0	1	37	9
Juillet — July	258	25	1	7	0	1	2	15	1	1	26	7
Août — August	302	51	3	29	1	0	2	12	2	4	35	9
Septembre — September	282	35	0	23	1	1	2	7	0	0	28	6
Octobre — October	314	33	2	21	1	2	0	10	0	0	33	7
Novembre — November	307	35	1	10	3	0	0	18	0	1	30	9
Décembre — December	402	34	0	13	4	2	14	20	0	1	31	8

		1919	1920	1921	1922	1923	1924	1925
Méningite cérébro-spinale	Cerebro-spinal meningitis	2	1	0	4	1	0	2

LYON

(Population : 561 600. R. 1921.)

Source : Rapport annuel du Bureau Municipal d'Hygiène, 1922-1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Bronchite aiguë Acute Bronchitis	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrhœa & enteritis under 2 years	Diphtérie Diphtheria	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	9129	980	126	5	282	58	56	20	332	609	4	5	1022	266
» 1920	8162	1304	83	13	379	22	78	39	189	707	9	7	1053	238
» 1921	8561	1372	82	4	345	26	130	23	150	647	14	7	1258	316
» 1922	8232	1139	114	7	286	13	150	20	235	518	3	8	1133	357
» 1923	8073	766	52	20	281	7	84	27	102	448	5	7	1032	226
» 1924	8665	764	39	2	188	40	71	17	101	316	17	11	1045	236
» 1925	9013	802	53	14	183	45	57	21	180	393	4	3	1168	297
Janvier — January	973	85	3	1	9	10	2	3	24	39	0	1	145	14
Février — February	794	72	6	1	3	3	3	1	28	34	0	0	96	26
Mars — March .	864	57	7	0	17	3	9	1	25	46	0	0	102	31
Avril — April . .	815	72	6	1	18	1	5	1	22	41	0	0	117	45
Mai — May . .	737	66	4	2	19	5	2	1	15	35	2	0	96	30
Juin — June .	688	72	4	3	25	4	9	0	5	37	1	0	86	25
Juillet — July . .	675	77	4	2	19	0	4	2	3	27	0	0	89	26
Août — August .	694	81	1	2	29	2	6	1	8	26	0	0	93	29
Septemb. — Septemb.	589	59	2	1	16	6	6	2	12	31	1	1	71	23
Octobre — October.	653	52	3	0	10	2	1	4	5	17	0	1	84	5
Novemb. — November	661	48	2	0	8	2	2	3	12	21	0	0	97	26
Décemb. — December	870	61	11	1	10	7	8	2	21	39	0	0	92	17

VILLES DE FRANCE *(suite)*. — FRENCH TOWNS *(continued)*.

PARIS

(Population : 2 906 472. R. 1921.)

Sources : Annuaire statistique de la Ville de Paris, 1919-1924.
Bulletin décadaire de Statistique municipale, 1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Bronchite aiguë Acute bronchitis	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrhœa and enteritis under 2 years	Diphtérie Diphtheria	Encéphalite léthargique Encephalitis lethargica	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis,
Total 1919	44936	3976	173	150	932	138	42	142	162	2270	1419	341	104	6966	1327
» 1920	43082	5444	132	296	1331	222	184	272	146	689	1366	313	97	6599	1308
» 1921	41955	4937	92	35	1529	164	92	217	155	145	1299	171	45	7078	1228
» 1922	40583	4075	98	143	942	134	93	145	121	517	1212	143	36	6884	1193
» 1923	40325	4219	127	188	1210	136	123	139	194	169	1148	479	92	6730	1132
» 1924	41639	4061	73	201	921	159	93	123	150	316	1108	338	49	7057	1162
» 1925	42720	4182	30	223	1042	185	16	110	176	179	1209	671	90	6931	1203
Janvier — January	4214	425	7	32	68	18	2	6	17	48	144	63	8	597	98
Février — February	3801	422	1	21	56	21	1	17	19	39	120	87	8	638	92
Mars — March	4388	435	2	24	86	18	4	8	15	32	130	130	11	719	119
Avril — April	3808	394	6	29	59	16	1	4	14	12	129	121	8	655	125
Mai — May	3696	431	3	29	92	22	0	11	20	5	65	84	18	644	144
June — June	3160	322	1	20	94	17	0	11	19	2	75	35	9	553	104
Juillet — July	3044	309	1	17	94	17	0	12	15	1	72	17	10	519	106
Août — August	2744	335	1	13	161	6	1	8	7	1	57	11	1	468	100
Septembre — September	2857	266	2	8	122	10	2	11	11	1	54	19	2	492	82
Octobre — October	3218	256	1	11	82	10	1	7	14	3	83	33	6	504	73
Novembre — November	3322	252	1	9	61	11	3	4	12	6	91	24	4	543	74
Décembre — December	4468	335	4	10	67	19	1	11	13	29	189	47	5	599	84

	1919	1920	1921	1922	1923	1924	1925
Paludisme — Malaria	7	9	11	12	5	5	7
Typhus exanthématique — Typhus	0	1	1	0	0	0	0
Variole — Smallpox	32	1	1	1	0	1	0

Note. Les données sont provisoires. — Data are provisional.

STRASBOURG — STRASBURG

(Population : 166 750. E. 31. déc. 1924.)

Source : Rapport de l'Office municipal d'Hygiène, 1919-1924.
Bulletin statistique mensuel de la Ville de Strasbourg, 1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrhœa and enteritis under 2 years	Diphtérie Diphtheria	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis,
Total 1919	2817	276	15	39	7	10	7	4	144	10	274	1	5	388	95
» 1920	2745	480	20	123	16	7	18	7	56	3	147	29	5	310	74
» 1921	2758	473	12	142	13	7	20	6	54	20	132	10	5	289	88
» 1922	2596	348	13	39	17	8	17	4	80	41	112	0	1	258	66
» 1923	2601	356	9	82	15	7	16	4	15	16	102	33	6	301	80
» 1924	2777	323	10	47	16	9	5	1	46	3	107	1	3	310	84
» 1925	2022	385	21	90	10	12	9	8	27	3	73	42	5	319	75
Janvier — January	267	33	3	3	0	1	2	1	8	1	11	0	0	32	7
Février — February	263	29	2	1	1	1	1	1	3	0	11	0	1	29	5
Mars — March	269	32	6	5	0	2	1	1	8	0	7	0	0	28	7
Avril — April	260	36	2	4	0	2	1	0	2	0	4	0	0	28	10
Mai — May	219	24	1	1	1	0	0	0	1	0	4	0	0	28	8
Juin — June	233	29	1	11	1	1	1	1	1	1	4	0	1	29	6
Juillet — July	241	24	1	10	2	0	0	1	0	0	6	7	1	25	8
Août — August	210	43	0	21	1	0	1	0	1	0	1	4	0	23	7
Septembre — September	204	36	3	13	1	3	0	2	0	1	2	1	0	17	2
Octobre — October	229	35	0	11	1	0	2	0	0	0	4	1	2	25	4
Novembre — November	222	29	1	6	1	0	0	1	1	0	9	7	0	26	9
Décembre — December	305	35	1	4	1	2	0	0	2	0	10	22	0	29	

VILLES D'ITALIE — ITALIAN TOWNS.

GÊNES — GENOA

(Population : 335 000. E. 31. déc. 1925.)

Sources : Statistica del cause di morte, 1919-1923.
Bollettino Municipale, 1924-1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite total Diarrhœa and enteritis	Diarr. et entér. jusqu'à 1 an. Diarrhœa and enteritis under 1 year	Diphtérie Diphtheria	Fièvre puerpérale Puerperal fever	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Pneumonie et broncho-pneu. Pneumonia and broncho-pneumonia	Rougeole Measles	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	5900	510	7	291	128	29	5	79	151	905	20	712	215
» 1920	5553	755	33	291	201	22	3	92	246	873	32	589	170
» 1921	4730	604	20	233	163	15	2	54	6	666	9	570	161
» 1922	5048	611	19	243	170	8	6	84	55	755	12	570	148
» 1923	4644	550	10	237	164	14	4	56	78	677	48	592	150
» 1924	4641	491	14	192	133	13	3	41	46	690	37	564	107
» 1925	4724	497	20	174	124	10	5	60	39	566	7	586	148
Janvier — January	421	48	0	4	2	1	2	1	8	71	0	52	13
Février — February	373	41	0	13	10	0	0	1	3	48	0	54	8
Mars — March	458	32	2	8	2	4	1	3	4	62	1	54	10
Avril — April	402	36	5	5	1	1	1	4	12	59	2	56	11
Mai — May	378	44	4	9	7	2	0	2	2	57	1	41	19
Juin — June	366	48	4	21	15	0	0	6	4	31	0	54	17
Juillet — July	366	48	3	31	24	0	0	7	0	22	1	44	7
Août — August	332	44	1	27	23	0	1	4	0	24	1	44	14
Sept. — Sept.	333	39	0	24	17	0	0	13	0	25	1	35	23
Octobre — October	337	36	1	15	11	1	0	9	0	21	0	43	16
Nov. — Nov.	380	37	0	9	7	0	0	7	2	39	0	59	6
Déc. — Dec.	578	44	0	8	5	1	0	3	4	107	0	50	4

	1919	1920	1921	1922	1923	1924	1925
Méningite cérébro-spinale — Cerebro-spinal meningitis	1	5	8	3	2	5	3

MILAN

(Population : 864 790. E. 31. déc. 1924.)

Sources : Statistica delle Cause di Morte, 1919-1923.
Annuario Storico-Statistico, 1920-1923.
Bollettino Municipale, 1924-1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et enterite total Diarrhœa and enteritis total	Diarrhée et entérite jusqu'à 1 an Diarr. and enteritis under 1 year	Diphtérie Diphtheria	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	11829	855	44	518	245	38	38	29	231	461	16	1498	7	16	1436	398
» 1920	11516	1339	22	619	367	40	30	43	395	443	13	1637	25	8	1170	395
» 1921	10135	1257	8	726	434	15	37	35	209	25	10	1167	7	12	1050	373
» 1922	10368	1150	25	562	343	26	37	33	170	200	6	1302	7	6	1038	331
» 1923	9746	1115	40	664	402	20	42	18	194	42	12	1029	39	12	1144	321
» 1924	10748	1168	31	545	346	30	44	28	167	72	7	1264	5	6	1181	373
» 1925	11627	1305	18	721	468	27	43	17	144	127	8	1529	11	10	1014	362
Janvier — January	1137	105	1	23	13	2	3	1	2	29	1	216	1	0	85	23
Février — February	951	82	0	22	12	4	3	3	1	29	0	159	1	0	76	31
Mars — March	1094	92	4	22	9	3	5	1	2	21	2	174	2	3	98	27
Avril — April	926	82	1	28	14	3	6	0	5	9	0	173	2	0	82	27
Mai — May	917	101	3	34	16	2	6	1	7	2	1	115	1	2	94	29
Juin — June	867	117	1	80	54	3	5	1	4	1	1	88	2	1	84	29
Juillet — July	906	166	3	116	86	1	4	3	7	1	1	67	1	3	75	40
Août — August	914	196	0	160	128	3	2	2	21	0	0	58	0	1	71	34
Septembre — September	792	112	1	95	63	3	1	1	22	1	1	54	0	0	72	21
Octobre — October	867	93	0	62	36	0	1	0	21	3	0	79	0	0	90	33
Novembre — November	944	78	2	49	23	1	2	1	21	7	1	92	0	0	81	47
Décembre — December	1312	81	2	30	14	2	5	3	31	24	0	254	1	0	106	21

VILLES D'ITALIE *(suite)*. — ITALIAN CITIES *(continued)*.

ROME

(Population : 726 000. E. 30. juin. 1925.)

Sources: Annuario Statistico, Comune di Roma, 1911-1924.
« Capitolium », Rassegna mensile d'Attività municipale, 1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrh. et entérite Diarrhœa and enteritis	Diphtérie Diphtheria	Erysipèle Erysipelas	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie * Pneumonia *	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919 .	11288	1086	35	791	47	44	143	735	20	1266	7	61	1439	571
» 1920 .	12098	1504	88	796	59	40	147	875	8	1813	123	188	1182	471
» 1921 .	11262	1493	66	890	75	37	126	109	11	1706	179	170	1118	377
» 1922 .	12031	1593	60	886	52	49	126	432	24	1860	81	132	1260	378
» 1923 .	11550	1596	125	898	57	43	155	190	28	1601	284	211	1141	394
» 1924 .	12051	1564	47	852	98	59	169	230	20	1567	7	154	1378	377
» 1925 .	12587	1527	105	882	95	51	129	186	19	1767	269	185	1325	416
Janvier — January	1185	137	3	38	2	9	10	29	3	201	5	17	114	24
Février — February	959	87	4	16	3	8	4	21	1	171	11	8	87	44
Mars — March . .	1181	101	11	17	11	5	2	46	2	214	42	16	115	48
Avril — April . .	1076	98	15	16	13	3	4	23	2	192	73	24	99	36
Mai — May . .	1033	118	12	28	10	2	1	4	3	145	53	26	112	41
Juin — June . .	1080	236	23	165	11	2	2	1	3	126	36	19	114	40
Juillet — July . .	1072	179	9	192	9	2	12	0	0	115	18	19	112	51
Août — August .	945	122	5	132	8	4	24	1	1	103	7	22	96	19
Septemb. — Septemb.	836	99	5	81	10	3	16	5	2	85	2	5	108	34
Octobre — October.	911	101	5	90	7	2	21	2	0	84	3	9	128	27
Novemb. — November	939	108	9	73	2	2	19	9	1	91	14	8	115	27
Décemb. — December	1370	141	4	34	9	9	14	45	1	240	5	12	125	25

* Y compris la broncho-pneumonie. — Including broncho-pneumonia.

TRIESTE

(Population: 248 500. E. 31. déc. 1925.)

Sources: Riassunto del Movimento demografico nell' anno 1925 e confronto coll' anno 1924.
Movimento demografico del Municipio di Trieste, 1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrh. & enterit. under 2 years	Diphtérie Diphtheria	Fièvre puerpérale Puerperal fever	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	4189	9	143	9	21	88	61	147	11	13	721	173
» 1920	4399	21	295	19	10	61	143	250	13	24	532	199
» 1921	4184	7	354	7	18	55	7	208	10	8	558	159
» 1922	4059	69	131	16	7	26	40	202	75	8	537	127
» 1923	3645	2	168	12	15	33	21	230	36	95	548	156
» 1924	4177	3	164	41	11	30	41	184	103	76	683	148
» 1925	3774	52	132	19	11	37	9	198	22	26	582	118
Janvier — January	391	0	4	7	2	1	2	29	0	7	52	13
Février — February	318	2	5	1	1	2	2	29	0	1	44	6
Mars — March	403	7	3	2	2	2	2	29	2	6	63	11
Avril — April	336	15	4	3	1	1	1	19	3	0	58	12
Mai — May	299	9	5	0	0	1	0	18	8	2	48	16
Juin — June	275	11	9	2	1	3	0	9	5	0	43	14
Juillet — July	251	0	15	1	1	5	0	12	2	4	42	8
Août — August	274	1	37	0	2	4	0	9	1	4	37	10
Septembre — September	281	2	37	0	0	4	0	2	0	0	38	5
Octobre — October	294	1	7	3	0	8	0	4	1	2	55	8
Novembre — November	273	3	3	0	0	5	0	10	0	0	59	6
Décembre — December	379	1	3	0	1	1	2	28	0	0	43	9

VILLES D'ITALIE *(suite)*. — ITALIAN CITIES *(continued)*.

VENISE — VENICE

(Population : 201 100. E. 31 janv. 1925.)

ces: STATISTICA DEL CAUSE DI MORTE, 1919-1923.
BOLLETTINO MENSILE DELL' UFFICIO DI STATISTICA DEL COMUNE DI VENEZIA, 1924.
RIVISTA MENSILE DELLA CITTÀ DI VENEZIA, 1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarr. et entér. jusqu'à 2 a. Diarrhœa and enteritis under 2 years	Diphtérie Diphtheria	Fièvre typhoïde Enteric fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919 . .	2411	381	13	134	6	23	101	99	11	210	98
» 1920 . .	2688	578	22	170	14	40	89	119	10	269	88
» 1921 . .	2666	495	8	184	15	29	4	91	1	263	86
» 1922 . .	2826	568	73	202	16	18	45	87	2	254	81
» 1923 . .	2721	495	11	183	31	32	41	37	58	255	85
» 1924 . .	3124	644	30	250	17	29	21	128	5	365	113
» 1925 . .	3140	575	25	214	18	26	28	86	21	332	84
anvier — January . .	349	62	5	13	3	3	9	13	2	33	7
évrier — February . .	277	48	5	5	0	2	5	5	1	30	12
Iars — March . .	314	50	2	9	1	1	3	11	1	29	8
vril — April . .	233	43	1	5	3	2	1	13	1	31	10
Iai — May . .	230	40	2	10	0	0	2	5	0	31	7
uin — June . .	215	35	3	15	1	3	0	6	0	29	7
uillet — July . .	275	63	2	32	1	1	1	4	4	26	6
oût — August . .	236	59	1	48	0	1	0	3	6	30	9
eptembre — September . .	226	47	2	34	4	7	0	3	0	20	5
Octobre — October . .	215	46	1	24	1	4	1	3	0	14	3
Novembre — November . .	228	35	1	13	3	2	1	6	3	25	5
Décembre — December . .	342	47	0	6	1	0	5	14	3	34	5

		1919	1920	1921	1922	1923	1924	1925
Fièvre puerpérale	Puerperal fever . . .	1	0	1	2	5	4	0
Scarlatine	Scarlet fever.	0	0	1	1	5	1	1
Paludisme	Malaria	28	6	10	3	3	5	0

VILLES DES PAYS-BAS — DUTCH TOWNS.

AMSTERDAM

(Population : 718 045. E. 1. janv. 1926.)

he: BULLETIN MENSUEL DE STATISTIQUE DE LA VILLE D'AMSTERDAM.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrh. et entérite total Diarrhœa and enteritis	Diarrh. et entérite jusqu'à 2 ans Diarrhœa & enteritis under 2 years	Diphtérie Diphtheria	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919 .	7984	729	96	65	51	52	9	77	136	556	152	16	1037	223
» 1920 .	7047	693	52	84	60	34	13	56	319	357	106	6	807	206
» 1921 .	6908	796	130	106	90	29	17	43	25	372	69	4	675	181
» 1922 .	7177	669	96	55	58	28	11	20	276	385	61	4	583	162
» 1923 .	6403	538	50	49	61	24	6	42	58	296	32	5	567	130
» 1924 .	6219	472	63	78	53	14	13	28	36	269	57	6	549	145
» 1925 .	6463	486	39	86	63	23	16	22	42	276	79	12	511	182
Janvier — January	628	56	5	9	6	2	1	4	7	38	20	0	43	16
Février — February	522	27	0	2	0	8	1	0	10	32	8	1	39	9
Mrs — March .	594	57	4	7	6	4	1	3	6	37	16	3	46	18
April — April . .	577	41	5	4	3	2	1	3	2	18	18	1	67	18
Mi — May . .	552	50	10	12	10	0	1	0	2	28	4	0	34	17
Jin — June .	442	42	4	10	6	1	2	0	2	17	2	0	26	19
Jillet — July . .	520	40	2	13	9	1	3	6	0	13	1	5	35	12
Aût — August .	419	32	1	8	7	0	1	2	1	14	1	0	38	15
Sptemb. — Septemb.	472	25	2	7	5	1	0	2	0	10	0	1	36	13
Cober — October.	497	30	1	2	1	0	1	1	1	17	0	0	40	15
Nvemb. — November	542	32	1	4	4	3	4	0	1	14	3	0	52	15
Dcemb. — December	698	54	4	8	6	1	0	1	10	38	6	1	55	15

VILLES DES PAYS-BAS *(suite)*. — DUTCH TOWNS *(continued)*.

Sources: Statistiek van de Sterfte naar den Leeftijd en naar de oorzaken van den Dood, 1919-1922. Maandschrift van het Centraal Bureau voor de Statistiek, 1923-1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0–1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite, 0–2 ans Diarrhoea and enteritis, 0–2 years	Diphtérie Diphtheria	Fièvres typhoïde et paratyphoïde Enteric fever	Fièvre puerpérale Puerperal fever	Grippe Influenza	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes
LA HAYE — THE HAGUE (Population: 398 109. E. 1. déc. 1925.)													
Total 1919	4237	417	38	56	11	21	7	67	250	30	11	399†	2
» 1920	3698	379	19	62	14	5	7	102	204	25	5	328†	1
» 1921	3399	369	24	74	8	3	9	19	162	24	2	285†	1
» 1922	3548	289	13	19	7	3	6	115	172	29	6	280	
» 1923	3524	282	25	46	6	5	2	50	180	10	2	277	
» 1924	3473	257	11	29	9	1	9	57	159	7	2	252	
» 1925*	3525	255	7	31	11	2	6	35	152	42	4	252	
Janvier—January	297	22	0	0	2	0	0	6	12	2	0	15	
Février—February	281	21	0	1	1	0	0	7	16	0	0	28	
Mars—March	324	25	2	3	2	0	1	3	15	0	1	17	
Avril—April	291	16	0	3	1	0	1	4	11	5	0	27	
Mai—May	301	18	0	2	1	0	0	2	14	4	1	34	
Juin—June	277	19	1	3	1	0	0	1	13	8	0	18	
Juillet—July	246	23	2	3	1	0	0	0	6	10	0	18	
Août—August	274	19	1	2	0	1	2	2	5	3	0	19	
Septembre—September	253	20	0	5	0	1	0	1	8	0	1	19	
Octobre—October	284	20	0	4	0	0	1	2	10	0	0	14	
Novembre—November	306	26	1	1	2	0	0	4	20	2	1	15	
Décembre—December	392	26	0	4	0	0	0	3	22	8	0	28	

			1923	1924	1925
Encéphalite léthargique	—	Encephalitis lethargica	0	3	1
Méningite cérébro-spinale	—	Cerebro-spinal meningitis	2	1	2
Poliomyélite aiguë	—	Acute poliomyelitis	4	1	0

ROTTERDAM (Population: 551 559. E. 1. déc. 1925.)													
Total 1919	6365	813	128	104	43	61	20	156	403	65	31	733†	4
» 1920	5382	700	46	115	26	19	9	204	311	50	22	627†	3
» 1921	4765	708	36	156	39	8	9	32	212	45	9	548†	1
» 1922	4929	644	60	86	32	6	10	168	269	29	5	481	1
» 1923	4452	513	42	76	18	11	13	59	187	18	2	482	1
» 1924	4328	466	32	64	22	2	6	29	186	13	10	451	1
» 1925*	4461	407	25	66	26	14	14	37	171	37	29	431	1
Janvier—January	369	30	3	6	3	0	1	0	7	10	2	38	
Février—February	350	39	1	1	6	0	3	5	18	7	1	35	
Mars—March	436	38	1	3	0	0	0	8	11	8	0	41	
Avril—April	402	43	0	7	2	2	2	3	20	3	0	38	
Mai—May	381	40	1	8	3	1	1	0	14	5	2	41	
Juin—June	329	29	5	10	2	1	0	1	7	2	1	34	
Juillet—July	340	24	3	7	1	1	2	1	10	0	2	32	
Août—August	289	24	3	6	1	3	3	1	6	1	2	24	
Septembre—September	315	18	5	5	2	3	0	2	13	0	3	25	
Octobre—October	378	30	0	5	1	2	1	3	13	0	3	51	
Novembre—November	356	31	1	2	2	0	0	1	15	0	10	34	
Décembre—December	503	60	2	6	3	1	1	12	37	1	3	38	

			1923	1924	1925
Encéphalite léthargique	—	Encephalitis lethargica	2	1	3
Méningite cérébro-spinale	—	Cerebro-spinal meningitis	14	12	14
Poliomyélite aiguë	—	Acute poliomyelitis	1	1	1

* Les données mensuelles sont provisoires, les totaux annuels sont corrigés. — Monthly data are provisional; annual totals are corre

† Tuberculose de l'appareil respiratoire. — Tuberculosis of the respiratory organs.

VILLES DE POLOGNE — POLISH TOWNS

CRACOVIE — CRACOW

(Population : 196 283. E. 31. déc. 1925.)

urces: Annuaire statistique de la République polonaise, 1922-1923.
Bulletin hebdomadaire du Mouvement de la Population.
Bulletin mensuel de statistique municipale.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès, de 0 à 1 an Deaths, up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrhœa and enteritis under 2 years	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	3476	549	17	185	9	90	13	29	26	9	244	15	15	722	130
» 1920	3890	778	4	316	21	267	14	43	112	6	297	42	55	534	129
» 1921	3110	707	11	276	11	132	17	15	8	5	272	4	59	445	95
» 1922	2696	577	11	166	15	18	10	43	20	17	237	3	15	414	123
» 1923	2784	635	10	190	7	16	11	26	9	12	227	20	6	430	120
» 1924	2936	560	12	153	14	19	21	19	18	5	249	0	14	514	119
» 1925	2415	500	9	101	13	13	9	18	12	11	223	12	16	351	81
Janvier — January	210	42	0	2	2	1	0	3	2	1	23	0	3	26	8
Février — February	223	57	1	10	1	0	3	1	2	1	12	0	4	31	9
Mars — March	195	40	0	5	0	0	1	1	2	2	19	0	3	25	12
Avril — April	196	35	1	6	0	2	1	0	1	0	21	0	0	32	14
Mai — May	181	32	1	7	1	0	0	3	0	1	12	1	0	33	5
Juin — June	184	41	0	15	0	1	0	0	1	0	15	1	1	27	8
Juillet — July	171	35	1	10	0	2	0	1	0	1	14	0	0	23	4
Août — August	192	45	1	18	0	1	1	2	0	2	12	0	1	20	4
Septembre — September	206	42	2	14	3	4	1	4	2	0	20	1	0	35	4
Octobre — October	209	40	1	5	0	2	1	1	0	1	16	2	2	25	5
Novembre — November	209	40	0	5	3	0	0	1	0	0	20	3	2	35	3
Décembre — December	239	51	1	4	3	0	1	1	2	2	39	4	0	39	5

	1919	1920	1921	1922	1923	1924	1925
Variole — Smallpox	3	7	0	3	2	6	0
Typhus exanthématique — Typhus	167	195	15	20	7	1	2

LEMBERG — LWOW

(Population: 234 935. E. 31. déc. 1925.)

Source: Bulletin mensuel de statistique municipale.

Mois Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entér. jusqu'à 2 ans Diarrhœa & enteritis under 2 years	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	5865	633	29	82	14	67	10	29	19	20	661	12	22	1425	199
» 1920	5461	783	10	163	28	268	7	69	92	51	831	16	167	843	118
» 1921	4160	600	3	131	17	75	2	62	5	29	497	14	110	676	135
» 1922	4074	730	14	120	16	28	3	37	13	45	508	18	28	704	128
» 1923	4051	704	13	155	19	10	6	22	9	26	395	19	34	746	117
» 1924	3976	631	4	121	18	22	4	30	8	52	487	1	44	658	105
» 1925	3724	539	23	113	27	17	0	11	2	50	435	17	57	441	200
Janvier — January	340	48	1	7	1	0	0	2	0	7	37	0	3	43	16
Février — February	273	45	0	9	1	0	0	2	0	2	40	0	3	38	13
Mars — March	322	41	0	3	1	1	0	0	0	10	38	0	3	48	9
Avril — April	356	59	5	10	3	1	0	1	0	4	58	0	2	39	27
Mai — May	284	47	1	15	2	0	0	0	0	0	31	0	6	45	24
Juin — June	296	36	2	10	2	1	0	0	0	4	18	0	6	42	20
Juillet — July	295	52	2	10	0	0	0	2	0	4	36	0	1	37	21
Août — August	267	51	7	15	0	1	0	1	1	2	25	1	7	21	16
Septembre — September	294	50	0	16	1	7	0	0	0	6	29	1	7	24	18
Octobre — October	313	43	2	9	6	4	0	3	1	3	39	4	4	30	9
Novembre — November	292	28	2	6	3	2	0	0	0	4	30	4	5	22	5
Décembre — December	392	39	1	3	7	0	0	0	0	4	54	7	10	52	22

	1919	1920	1921	1922	1923	1924	1925
Vriole — Smallpox	2	6	3	1	0	0	0
Tphus exanthématique — Typhus	291	372	69	95	12	10	4

VILLES DE POLOGNE *(suite)*. — POLISH TOWNS *(continued)*.

LODZ

(Population : 553 650. E. 31. déc. 1925.)

Sources: Annuaire statistique de la Ville de Lodz, 1923-1924.
Rapport mensuel du Service de Statistique, 1925. — Monthly Reports from the Statistical Service, 1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diphtérie Diphtheria	Dysenterie Dysentery	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms	Typhus exant. Typhus.
Total 1919	9573	1659	102	48	136	10	18	81	89	17	928	185	88	2146	391	278
» 1920	9577	2164	58	54	223	6	21	198	273	38	1237	12	347	1345	276	91
» 1921	7619	1762	15	65	117	17	12	236	13	39	767	44	54	1024	219	39
» 1922	7827	2263	21	40	97	18	15	125	49	29	758	25	28	1213	194	19
» 1923	8499	2723	59	65	218	8	27	161	23	42	1001	211	42	1258	216	7
» 1924	8238	2520	40	83	30	16	15	146	53	20	100	36	143	1344	201	7
» 1925	7589	2369	40	107	20	11	26	87	40	40	893	61	128	1146	219	2
Janvier — January	704	213	2	20	0	2	2	2	2	3	117	24	14	107	16	0
Février — February	596	211	4	12	0	1	2	5	3	1	99	13	6	80	13	0
Mars — March	634	201	4	8	1	1	3	8	1	1	96	4	10	87	27	2
Avril — April	667	184	5	11	1	2	3	2	4	6	98	5	5	118	18	0
Mai — May	613	213	3	3	1	0	3	6	9	2	78	3	6	101	25	0
Juin — June	637	235	1	8	5	0	0	9	1	8	70	0	14	90	18	0
Juillet — July	678	222	7	4	6	0	2	9	1	4	60	5	13	108	22	0
Août — August	706	256	4	9	3	0	6	4	2	3	58	3	13	91	16	0
Septembre — September	653	192	2	7	3	1	1	20	3	4	58	1	18	108	14	0
Octobre — October	542	147	2	10	0	2	1	10	2	2	46	1	16	74	19	0
Novembre — November	546	133	1	5	0	1	1	8	2	2	50	2	6	97	14	0
Décembre — December	613	162	5	10	0	1	2	4	101	4	63	0	7	85	17	0

		1919	1920	1921	1922	1923	1924	1925
Encephalite léthargique	Encephalitis lethargique	0	0	0	1	6	5	4
Variole	Smallpox	1	2	2	7	2	0	0

VARSOVIE — WARSAW

(Population: 992 450 E. 1925.)

Sources: Annuaire Statistique de la Ville de Varsovie.
Bulletin mensuel de Statistique municipale.
Bulletin officiel polonais.

Mois — Month	Décès toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalitis lethargica.	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Rougeole Measles	Scarlatine Scarlet fever	Typhus exanth. Typhus
Total 1919	18896	2809	100	63	112	—	62	31	143	198	131	623
» 1920	19134	4332	93	81	384	27	57	39	282	42	582	242
» 1921	14114	3088	59	53	89	11	53	70	168	187	206	115
» 1922	14622	3670	97	60	69	18	57	66	139	161	182	95
» 1923	13554	3340	105	56	28	25	30	91	133	108	192	15
» 1924	14173	3279	91	74	42	18	51	71	172	12	234	9
» 1925	13968	3447	141	89	19	9	28	51	140	254	207	6
Janvier — January	1191	281	7	8	0	1	1	3	8	5	23	0
Février — February	1061	241	10	7	1	0	1	3	6	13	14	0
Mars — March	1225	298	10	11	4	1	4	2	6	36	13	1
Avril — April	1258	305	20	5	1	1	3	3	8	46	11	2
Mai — May	1168	314	18	15	0	0	3	4	4	49	18	0
Juin — June	1193	338	16	7	4	0	0	3	10	39	18	1
Juillet — July	1126	305	6	1	0	2	2	4	22	22	17	1
Août — August	1084	320	10	1	3	0	3	5	14	8	14	0
Septembre — September	1112	260	10	5	4	1	3	3	24	8	19	0
Octobre — October	1106	245	9	9	1	0	6	6	12	6	30	0
Novembre — November	1101	222	7	7	1	1	1	7	13	8	16	0
Décembre — December	1343	318	18	13	0	2	1	8	13	14	14	1

		1919	1920	1921	1922	1923	1924	1925
Fièvre récurrente	Relapsing fever	3	6	2	5	0	0	0
Variole	Smallpox	20	38	152	4	1	1	0

VILLES DE TCHÉCOSLOVAQUIE — CZECHOSLOVAKIAN TOWNS

ce: Rapport du Département de Statistique de la République tchécoslovaque. — Report from the Statistical Department of the Czechoslovak Republic.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrh. et entér. jusqu'à 2 ans Diarrh. and enteritis under 2 years	Diphtérie Diphtheria	Encéphalite léthargique Encephalitis lethargica	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
BRATISLAVE — BRATISLAVA (Population: 93 189. R. 15. fév. 1921.)																
Total 1919	1934	223	3	40	6	0	0	3	8	32	0	179	2	10	311	20
» 1920	1791	342	2	59	6	0	2	4	12	20	0	264	5	3	219	36
» 1921	1697	332	6	67	5	0	3	3	15	1	0	179	2	8	202	31
» 1922	1849	367	17	66	6	1	1	8	20	4	3	239	3	14	262	32
» 1923	1786	284	0	23	10	9	1	3	17	4	2	164	0	2	217	18
» 1924	1775	325	1	25	8	0	3	1	13	0	2	142	0	7	167	26
» 1925	1823	294	1	39	3	3	1	2	14	8	0	193	0	14	228	30
nvier — January	148	34	0	2	0	0	0	0	0	0	0	19	0	3	18	2
évrier — February	136	24	0	0	0	0	0	0	2	0	0	15	0	2	19	2
ars — March	142	17	1	0	0	0	0	2	1	1	0	12	0	2	22	2
vril — April	179	19	0	1	0	1	0	0	0	7	0	21	0	0	24	7
ai — May	176	29	0	5	0	1	0	0	1	0	0	16	0	2	27	2
in — June	150	24	0	1	0	0	0	0	1	0	0	15	0	2	17	4
illet — July	157	30	0	5	0	0	0	0	0	0	0	18	0	1	21	2
oût — August	155	24	0	4	0	0	1	0	2	0	0	13	0	0	16	3
eptembre — September	149	33	0	9	0	1	0	0	0	0	0	10	0	0	14	0
ctobre — October	135	23	0	8	0	0	0	0	5	0	0	11	0	0	11	1
ovembre — November	146	20	0	3	1	0	0	0	2	0	0	15	0	2	21	3
écembre — December	150	17	0	1	2	0	0	0	0	0	0	28	0	0	18	2
BRUNN — BRNO (Population: 221 758. R. 15. fév. 1921.)																
Total 1919	4034	465	7	129	9	0	12	17	35	40	0	375	9	2	909	106
» 1920	4173	705	15	160	26	47	17	53	38	70	4	379	9	2	738	131
» 1921	3508	604	2	153	15	12	18	17	60	3	2	287	11	2	520	100
» 1922	3583	555	3	108	11	4	19	11	33	11	15	380	22	35	507	104
» 1923	3021	406	3	53	7	12	5	21	24	5	8	209	0	34	360	111
» 1924	3333	456	3	41	7	13	7	13	31	3	5	261	4	23	435	119
» 1925	3412	443	2	27	2	11	13	14	43	19	8	356	17	11	421	96
nvier — January	306	45	0	1	0	2	1	2	5	0	0	34	4	1	40	12
vrier — February	287	44	0	3	0	1	0	4	4	0	0	37	5	0	35	10
rs — March	337	43	0	1	1	1	0	1	1	2	2	40	5	0	57	16
ril — April	402	51	0	4	0	0	1	1	4	13	0	72	0	2	44	7
ai — May	272	31	0	3	0	1	3	1	1	1	4	19	1	2	40	9
in — June	243	25	0	1	0	0	1	0	1	0	1	19	1	2	34	6
illet — July	270	35	0	1	0	2	2	3	5	0	0	23	1	2	22	8
oût — August	242	40	1	5	0	1	1	1	8	0	0	10	0	2	25	4
ptembre — September	260	31	1	2	0	0	0	0	6	0	1	19	0	0	27	4
tobre — October	232	31	0	2	0	3	0	0	3	0	0	17	0	0	23	9
vembre — November	275	35	0	1	0	0	1	0	3	1	0	27	0	0	37	6
cembre — December	286	32	0	3	1	0	3	1	2	2	0	39	0	0	37	5
MORAVSKA OSTRAVA (Population: 113 709. R. 15. fév. 1921.)																
Total 1919	1962	304	1	84	4	0	3	3	5	48	0	188	11	2	558	79
» 1920	2002	398	5	106	14	13	7	3	11	135	1	193	8	1	427	93
» 1921	1538	361	1	101	5	1	7	5	8	1	3	154	8	5	322	43
» 1922	1356	302	10	68	8	2	5	0	9	8	0	140	1	7	271	42
» 1923	1304	247	4	54	13	3	2	4	13	2	2	89	5	35	226	29
» 1924	1336	220	0	36	2	11	4	0	4	6	0	123	1	38	219	26
» 1925	1331	207	7	31	4	1	2	3	11	7	2	119	4	21	221	46
uary — January	120	18	0	3	0	1	0	0	0	0	0	8	0	4	18	4
rier — February	111	11	0	0	2	0	0	0	1	0	0	10	1	5	11	3
rs — March	112	30	0	4	0	0	0	1	0	0	1	8	0	1	23	6
ril — April	121	18	0	3	0	0	0	0	2	1	16	0	2	19	3
M — May	132	17	1	2	0	0	0	0	1	2	0	9	0	2	31	5
Ju — June	99	15	0	2	0	0	2	0	1	0	0	8	0	1	15	6
llet — July	113	15	1	6	1	0	0	0	0	0	0	9	0	1	24	4
ût — August	91	13	1	2	0	0	0	2	1	0	0	6	0	0	18	5
ptembre — September	86	13	0	1	0	0	0	0	3	3	0	8	0	0	9	0
obre — October	106	20	0	3	0	0	0	0	2	0	0	16	0	1	13	4
vembre — November	99	13	2	3	0	0	0	0	0	0	0	9	0	2	15	4
embre — December	141	24	2	2	1	0	0	0	2	0	0	12	3	2	25	2
PILSEN (PLZEN) (Population: 108 023. R. 15. fév. 1921.)																
Total 1919	1785	176	2	38	6	0	8	1	43	18	2	106	0	0	424	50
» 1920	1558	282	1	53	5	4	3	14	38	8	1	98	11	0	269	26
» 1921	1473	257	3	54	3	0	6	17	22	10	1	111	0	0	227	51
» 1922	1578	267	1	54	5	1	5	10	42	5	0	107	0	2	245	30
» 1923	1453	224	2	61	1	1	4	11	22	0	0	90	9	3	205	37
» 1924	1563	235	2	56	1	3	12	7	21	2	5	94	7	3	199	20
» 1925	1493	166	2	31	4	5	9	6	16	8	1	83	0	7	227	33
vier — January	153	28	1	4	0	0	1	1	2	0	0	11	0	1	17	6
rier — February	127	21	0	4	1	1	2	0	1	3	0	15	0	1	18	2
s — March	131	15	0	2	0	0	2	0	3	3	0	5	0	2	18	3
vl — April	130	14	0	3	0	0	0	0	1	2	1	6	0	1	27	3
— May	136	17	0	3	0	0	2	2	0	0	0	11	0	1	21	4
u — June	117	8	0	4	0	0	0	0	3	0	0	1	0	0	22	3
llet — July	121	7	0	1	0	0	2	0	3	0	0	9	0	1	13	6
ût — August	105	8	0	1	0	2	0	3	1	0	0	3	0	0	9	1
ptembre — September	113	9	0	2	1	0	0	0	0	0	0	8	0	0	19	2
obre — October	121	14	0	2	1	1	0	0	1	0	0	4	0	0	18	1
vembre — November	117	12	1	0	0	1	0	0	1	0	0	5	0	0	19	2
embre — December	122	13	0	5	1	0	0	0	0	0	0	5	0	0	26	0

VILLES DE TCHÉCOSLOVAQUIE *(suite)* — CZECHOSLOVAKIAN TOWNS *(continued)*.

PRAGUE

(Population : 712 700. E. 1. janv. 1925.)

Source: Bulletin du Bureau de Statistique de la Ville de Prague, 1919-1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrh. a. enteritis under 2 yrs.	Diphtérie Diphtheria	Encéphalite léthargique Encephalitis lethargica	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méning. cérébro-spinale Cerebro-spinal meningitis	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	6987	602	26	116	15	—	7	6	12	* 210	1	293	6	7	1416	15
» 1920 *a*	6824	941	11	198	16	—	15	14	21	* 278	0	324	53	4	1117	13
» 1921 *a*	8202	1619	24	413	24	—	43	20	58	* 98	3	338	15	13	1188	18
» 1922 *a*	8428	1468	35	274	22	—	28	15	29	* 58	8	416	68	39	1237	23
» 1923 *a*	7797	1104	30	158	17	11	32	13	35	48	8	286	35	54	971	21
» 1924 *a*	8332	1104	31	153	43	9	40	10	16	41	7	327	75	49	1029	15
» 1925 *b*	8404	1067	27	161	66	12	45	18	27	95	11	314	35	50	1070	17
Janvier — January	737	98	1	12	7	4	9	3	0	11	1	33	6	3	101	1
Février — February	619	78	3	8	7	0	3	2	2	6	1	19	8	7	74	1
Mars — March	897	121	7	13	9	1	4	1	1	23	1	53	10	12	111	1
Avril — April	843	121	2	19	6	1	3	1	1	32	1	43	7	7	107	1
Mai — May	708	96	6	13	3	1	0	2	1	9	1	31	4	9	98	1
Juin — June	622	86	1	14	3	2	6	1	1	2	1	12	0	3	98	1
Juillet — July	655	85	3	18	2	1	7	2	5	0	1	26	0	1	78	1
Août — August	576	67	1	13	1	0	4	2	1	1	1	17	0	2	76	1
Septembre — September	605	77	0	18	7	0	3	0	3	1	0	7	0	3	70	1
Octobre — October	669	89	1	19	10	1	3	2	3	5	2	17	0	0	90	1
Novembre — November	669	55	1	7	4	0	3	1	4	1	0	22	0	2	71	1
Décembre — December	804	94	1	7	7	1	0	1	5	4	1	34	0	1	96	1

a Population civile seulement. — Civilian population only.
b Y compris les militaires. — Military included.
* Y compris les décès dus à l'encéphalite léthargique. — Including deaths from encephalitis lethargica.

VILLES DE L'U. R. S. S. — CITIES OF U. S. S. R.

KHARKOV — KHARKOF

(Population: 360 600. E. 1. janv. 1925.)

Source: Rapport du Commissariat du peuple de la Santé publique. — Report from People's Commissariat for Public Health.

Cause de décès — Cause of death		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	D D
Décès, toutes causes	Deaths, all causes	8934	7203	4493	4504	5080	417	335	346	429	464	482	473	418	398	427	407	4
Décès, 0-1 an	Deaths, 0-1 year	—	—	—	—	946	80	52	81	73	84	128	101	92	73	65	65	
Coqueluche	Whoop.-cough	—	—	25	13	35	0	2	3	7	7	3	6	2	2	3	0	
Diphtérie	Diphtheria	—	—	20	21	38	0	1	2	1	3	1	3	9	1	5	6	
Dysenterie	Dysentery	—	—	28	43	24	0	1	0	2	1	7	6	3	2	2	0	
Fièvre typhoïde	Enteric fever	—	—	65	84	104	2	0	2	3	6	5	11	20	17	13	18	
Grippe	Influenza	—	—	9	11	15	3	2	1	0	1	0	0	1	2	0	3	
Méningite cérébro-spinale	Cerebro-spinal meningitis	—	—	7	4	7	0	0	1	1	4	1	0	0	0	0	0	
Scarlatine	Scarlet fever	—	—	113	161	186	17	18	14	26	11	4	6	10	13	37	22	
Tuberculose pulmonaire	Pulmonary tuberculosis	—	—	520	470	487	62	45	28	63	52	35	32	33	31	32	35	
Tuberculose, autres formes	Tuberculosis, other forms	—	—	47	101	92	3	9	9	13	8	10	8	8	7	7	6	

VILLES D'U.R.S.S. (*suite*) — TOWNS OF U.S.S.R. (*continued*).

LENINGRAD

(Population : 1 085 000. R. 1923.)

Source : Rapports du Service statistique de la Ville et du Gouvernement de Leningrad. — Reports from Statistical Office of the City and Government of Leningrad.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Diphtérie Diphtheria	Dysenterie Dysentery	Fièvre typhoïde Enteric fever	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms	Typhus exanthémat. Typhus
Total 1919. . . .	69381	612	3557	255	1304	477	3944	378	5611
» 1920. . . .	37479	168	2655	256	92	183	3733	377	4752
» 1921. . . .	25689	144	1759	307	306	266	2801	391	767
» 1922. . . .	27650	172	1999	172	392	331	3484	461	1585
» 1923. . . .	17482	104	321	103	240	231	2641	591	106
» 1924. . . .	19695	89	468	176	765	548	2545	659	46
» 1925* . . .	20024	104	333	254	663	836	2450	628	17
Janvier — January 24. . . .	1537	9	8	14	88	81	180	63	1
Février — February 21. . . .	1392	5	6	15	79	47	207	54	0
Mars — March 21. . . .	1525	10	7	3	72	49	208	57	3
Avril — April 18. . . .	1593	4	15	3	82	88	245	45	1
Mai — May 16. . . .	1635	8	5	6	76	60	234	63	1
Juin — June 13. . . .	1681	7	15	9	63	49	209	58	0
Juillet — July 11. . . .	1655	14	32	14	44	62	184	49	3
Août — August 8. . . .	1774	13	77	22	42	29	192	48	2
Septembre — September 5. . . .	1589	5	116	35	18	49	135	47	4
Octobre — October 3. . . .	1396	4	42	53	12	77	134	41	0
» — » 31. . . .	1405	8	11	27	17	83	170	26	1
Novembre — November 28. . . .	1334	13	5	25	28	72	158	44	0
Décembre — December 26. . . .	1348	20	2	26	38	71	157	28	1
1926 Janvier— January 2**. . .	408	2	0	5	11	28	48	11	0

	1919	1920	1921	1922	1923	1924	1925
Variole — Smallpox	2085	357	40	76	15	3	3

* Total pour l'année du calendrier. — Total for the calendar year.
** Une semaine seulement. — One week only.

MOSCOU — MOSCOW

(Population: 1 855 000 E. 1925.)

Source : Rapports du Service statistique de la Ville et du Gouvernement de Moscou. Reports from Statistical Office of the City and Government of Moscow.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès jusqu'à un an Deaths under one year	Coqueluche Whooping-cough	Diphtérie Diphtheria	Dysenterie Dysentery	Erysipèle Erysipelas	Fièvres typhoïde et paratyphoïde Enteric fever	Gastro-entérite Gastro-enteritis	Grippe Influenza	Pneumonie croupale Croupous pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms	Typhus exanthém. Typhus	Variole Smallpox
Total 1919	64318	8170	239	350	1598	253	474	3754	565	2117	597	449	3729	309	12253	1747
» 1920	40633	5572	86	188	1386	230	944	2746	187	852	241	621	4103	347	4536	247
» 1921	30055	7434	99	172	1443	187	729	2944	119	667	608	615	2517	374	718	230
» 1922	39990	8731	152	207	1621	240	539	4128	144	734	699	769	3092	507	3283	170
» 1923	22677	7039	165	156	247	103	161	1816	209	460	430	696	2375	474	102	24
» 1924	27083	9189	134	310	352	129	211	3016	207	444	1061	1508	2215	616	27	5
» 1925	24795	7479	187	284	146	156	207	2193	208	435	756	1213	2234	687	26	1
Janvier — January	2567	676	21	63	4	16	12	63	22	77	225	207	207	79	1	0
Février — February	2027	587	14	41	4	12	8	65	19	34	109	137	186	62	0	0
Mars — March	2185	641	24	35	3	12	11	76	21	61	90	97	227	71	3	0
Avril — April	2052	621	13	22	3	13	12	91	22	54	57	106	217	65	5	1
Mai — May	2143	685	15	23	9	11	15	186	17	50	70	90	223	61	4	0
Juin — June	2048	726	15	16	37	10	15	285	29	18	37	64	164	66	1	0
Juillet — July	2205	928	19	8	31	8	7	602	20	13	31	53	167	50	0	0
Août — August	1923	676	18	11	33	13	31	412	8	15	27	64	157	44	2	0
Septembre — Sept.	1736	487	13	11	14	11	27	174	9	24	14	67	143	50	2	0
Octobre — October	2036	511	17	15	4	14	31	126	17	33	25	105	157	46	4	0
Novembre — Nov.	1900	487	11	21	2	16	23	60	14	26	28	106	169	46	2	0
Décembre — Dec.	1973	454	7	18	2	20	15	53	10	30	43	117	217	47	2	0

BELGRADE

(Population: 111 740. R. 31. janv. 1921.)

Source: Rapport hebdomadaire sur le mouvement des maladies infectieuses dans le Royaume des Serbes, Croates et Slovèn

Cause de décès — Cause of death		Total 1925	1925											
			Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc Dec
Charbon	Anthrax	1	0	0	0	0	0	0	0	1	0	0	0	0
Coqueluche	Whooping-cough	0	0	0	0	0	0	0	0	0	0	0	0	0
Diphtérie	Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0
Dysenterie	Dysentery	3	0	0	0	0	0	0	0	1	1	0	1	0
Encéphalite léthargique	Encephalitis lethargica	0	0	0	0	0	0	0	0	0	0	0	0	0
Erysipèle	Erysipelas	1	0	0	0	0	0	0	0	0	1	0	0	0
Fièvres typhoïde et paratyphoïde	Enteric fever	19	1	0	2	0	1	0	1	4	1	3	5	1
Rougeole	Measles	1	0	0	0	0	1	0	0	0	0	0	0	0
Scarlatine	Scarlet fever	20	0	0	5	3	4	1	0	1	2	2	0	2
Tétanos	Tetanus	3	0	0	0	0	0	0	0	0	0	0	2	1

BRUXELLES * — BRUSSELS *

(Population : 808 000. E. 1. juin 1924.)

Source: Bulletin mensuel de Statistique demographique et médicale, 1924-1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite 0-2 ans Diarrhoea and enteritis, 0-2 years	Diphtérie Diphtheria	Encéphalite léthargique Encephalitis lethargica	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie et broncho-pneum. Pneumonia and broncho-pneum.	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis,
Total 1924	10184	943	46	250	17	6	10	34	23	87	20	663	17	2	963	279
» 1925	8278	930	49	235	14	9	12	35	28	80	14	688	62	6	923	172
Janvier — January	888	99	1	19	2	1	1	3	1	17	2	73	2	1	74	30
Février — February	646	89	8	16	0	3	2	2	1	7	0	76	11	0	66	22
Mars — March	763	92	5	15	1	0	1	4	4	20	1	88	8	1	93	23
Avril — April	712	73	2	15	4	1	2	4	2	14	1	62	9	2	104	14
Mai — May	660	73	7	17	0	0	1	2	2	3	4	58	2	0	83	16
Juin — June	574	50	1	16	1	0	0	2	1	2	3	34	17	0	70	10
Juillet — July	578	75	4	24	0	2	2	0	5	0	1	20	7	1	76	7
Août — August	560	81	4	28	1	0	0	3	5	0	1	26	1	0	65	17
Septembre — September	609	49	6	16	1	1	1	5	4	2	1	30	0	0	66	10
Octobre — October	674	60	4	21	3	1	1	2	0	4	0	46	0	0	79	10
Novembre — November	715	74	3	25	1	0	0	4	3	5	0	64	2	1	64	10
Décembre — December	899	115	4	23	0	0	1	4	0	6	0	111	3	0	83	13

* Agglomération bruxelloise. — Including suburbs.

BUCAREST — BUCHAREST

(Population: 800 000. E. 1922.)

Source: Bulletin officiel «Analele». — Official Bulletin "Analele".

Cause de décès — Cause of Death		Total 1924	Total 1925	1925										
				Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc Déc
Coqueluche	Whooping-cough	4	6	0	0	1	0	0	0	0	2	3	0	0	0
Diphtérie	Diphtheria	8	14	1	0	1	0	0	0	2	3	4	1	1	1
Dysenterie	Dysentery	0	1	0	0	0	0	0	1	0	0	0	0	0	0
Fièvre typhoïde	Typhoid fever	31	32	0	1	0	1	1	1	3	8	5	4	4	5
Scarlatine	Scarlet fever	31	19	0	2	1	2	1	1	1	3	0	2	2	3
Typhus exanth.	Typhus	5	2	0	0	0	0	1	0	0	1	0	0	0	0
Variole	Smallpox	0	0	0	0	0	0	0	0	0	0	0	0	0	0

BUDAPEST

(Population: 960 500. E. 24. déc. 1925.)

urce: Budapest Szekesfovaros Stadisztikai Hairfuzetei.

Mois — Month.	Décès toutes causes Deaths all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diphtérie Diphtheria	Dysenterie Dysentery	Diarrhée et entérite, total Diarrhœa and enteritis, total	Diarrhée et entérite jusqu'à 2 ans Diarrhœa and enteritis under 2 years	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro spinale Cerebro-spinal meningitis	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	20887	3025	90	104	305	756	607	95	55	120	286		1646	—	117	4056	555
» 1920	22053	3819	117	170	203	1022	920	90	49	135	1459		1964	300	388	3629	572
» 1921	18981	3149	111	128	—	1038	929	70	62	260	73	10	1677	288	470	2959	530
» 1922	19054	3146	85	106	—	1063	992	102	32	177	136	10	1613	295	238	3078	496
» 1923	18549	2846	205	70	249	1027	933	88	44	187	54	10	1309	138	126	3187	548
» 1924	18644	2511	149	60	168	780	669	115	45	148	114	13	1445	46	136	3292	524
» 1925	15869	2148	46	95	125	424	387	84	56	106	60	10	1126	111	228	2360	438
Janvier — January	1315	178	4	6	6	30	27	4	5	11	6	0	106	22	14	197	33
Février — February	1380	209	9	7	7	46	43	3	6	9	9	0	122	17	20	221	23
Mars — March	1576	213	7	10	8	34	31	5	4	8	20	0	137	27	25	237	45
Avril — April	1549	210	4	11	7	25	24	7	2	6	11	1	128	23	21	266	66
Mai — May	1370	154	2	9	9	25	24	10	2	4	3	1	82	10	22	241	54
Juin — June	1196	159	6	8	10	26	24	8	3	4	1	1	67	6	14	200	48
Juillet — July	1220	179	1	7	19	57	50	4	2	7	0	3	79	1	19	199	25
Août — August	1204	184	2	4	16	70	68	6	6	9	0	2	53	2	14	158	39
Septembre — September	1155	170	1	9	14	42	34	10	6	15	1	0	67	0	12	151	19
Octobre — October	1202	171	4	7	23	33	31	7	11	18	2	1	62	1	20	135	23
Novembre — November	1213	172	4	11	5	25	22	11	4	7	4	0	81	1	23	164	24
Décembre — December	1389	149	2	6	1	11	9	9	5	8	3	1	142	1	24	191	39

		1919	1920	1921	1922	1923	1924	1925
phus exanthématique	— Typhus	119	7	3	3	14	16	0
riole	— Smallpox	8	16	0	0	0	0	0

COPENHAGUE — COPENHAGEN

(Population : 580 000. E. 1. juill. 1924.)

urces: Dodsaarsagerne i Kcngeriget Danmark, 1921-1923.
Bulletin hebdomadaire de Statistique démographique et médicale de la Ville de Copenhague, 1924-1925.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Broncho-pneumonie et Bronchite capillaire Broncho-pneumonia and capillary bronchitis	Coqueluche Whooping-cough	Diarrhée et entérite Diarrhœa and enteritis	Diphtérie Diphtheria	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie Pneumonia	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	7172	954	560	103	88	73	17	5	754	33	188	31	19	563	168
» 1920	7754	1103	611	38	107	70	15	8	997	13	133	71	30	525	151
» 1921	6321	845	477	3	119	33	15	3	21	11	153	6	25	526	126
» 1922	6942	896	624	69	64	30	19	4	198	13	160	23	12	499	138
» 1923	6495	808	546	75	98	26	14	3	72	9	129	62	7	453	147
» 1924	6976	833	613	13	100	29	11	6	102	20	137	37	6	589	153
» 1925	6630	710	561	29	93	29	11	5	46	22	138	45	5	517	117
nvier — January	513	48	26	2	5	3	0	0	4	3	12	1	0	44	14
évrier — February	520	61	53	2	6	4	1	0	5	3	10	2	0	41	7
ars — March	653	94	72	3	5	2	1	1	8	0	13	1	2	62	10
vril — April	657	72	82	3	3	5	1	1	10	5	25	1	0	45	12
ai — May	656	66	60	4	6	1	0	0	7	4	17	2	1	46	14
uin — June	533	49	38	0	7	3	3	0	2	1	9	3	0	45	14
uillet — July	558	63	34	5	20	0	0	1	0	2	6	3	1	38	15
oût — August	423	48	19	2	21	1	0	0	0	0	5	2	0	31	5
ptembre — September	451	42	26	2	7	1	1	2	2	1	4	1	0	35	6
tobre — October	490	36	31	1	3	2	1	0	0	1	12	10	0	34	9
vembre — November	524	51	40	2	3	2	1	0	3	2	11	8	1	51	6
écembre — December	652	80	80	3	7	5	2	0	5	0	14	11	0	45	5

SOFIA

(Population : 154 000. R. 1920.)

Source : Rapports du Bureau de Statistique. — Reports from the Bureau of Statistics.

Cause de décès — Cause of death		Total 1922	Total 1923	Total 1924	Total 1925	1925 Période de quatre semaines se terminant: — Four-week period ending: Janv. Jan. 28	Févr. Feb. 25	Mars March 25	Avril April 22	Mai May 20	Juin June 17	Juill. July 15	Août Aug. 12	Sept. Sept. 9	Oct. Oct. 7	Nov. Nov. 3	Déc. Dec. 2	Déc. Dec. 31
écès, toutes causes	Deaths, all causes	3656	3271	3079	3344	207	223	274	474	291	250	224	245	258	210	197	240	251
écès de 0 à 1 an	Deaths up to 1 year	721	596	628	729	46	50	78	88	67	50	59	74	71	35	34	32	45
iphtérie	Diphtheria	5	28	33	29	0	2	1	5	1	1	1	1	3	2	4	3	5
ncéphalite léthargique	Encephalitis lethargica	0	3	3	17	6	2	2	7	0	0	0	0	0	0	0	0	0
rysipèle	Erysipelas																	
ièvre typhoïde	Enteric fever	8	20	24	18	1	1	0	3	1	2	1	1	0	1	4	3	0
éningite céré-bro-spinale	Cerebro-spinal meningitis	1	4	3	38	1	9	5	0	1	2	2	3	2	2	4	4	3
neumonie	Pneumonia	—	—	—	432	23	39	49	86	59	27	30	21	26	14	18	13	27
arlatine	Scarlet fever	86	99	32	3	0	0	0	0	0	0	0	0	0	1	0	2	0
uberculose pulmonaire	Pulmonary tuberculosis	753	601	540	646	29	43	48	82	70	68	44	51	47	43	34	41	46

OSLO

(Population : 258 700. E. 1. déc. 1923.)

Sources : Annuaire statistique de la ville de Christiania (Oslo), 1919-1923.
Bulletin hebdomadaire de statistique démographique et médicale, 1924-1925.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite total Diarrhœa and enteritis	Diphtérie Diphtheria	Grippe Influenza	Pneumonie Pneumonia	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes tuberculosis, other forms
Total 1919. . . .	3148	278	14	32	56	—	257	391	92
» 1920. . . .	3057	309	7	22	19	—	332	426	119
» 1921. . . .	2804	266	12	30	13	—	177	358	101
» 1922. . . .	3211	320	34	28	8	—	237	390	99
» 1923. . . .	2973	205	10	16	7	—	241	362	88
» 1924. . . .	2753	184	2	17	5	22	203	369	89
» 1925. . . .	2812	149	5	22	5	7	228	353	84
Janvier — January 24. . . .	235	9	2	1	1	0	20	32	7
Février — February 21. . . .	232	17	1	1	1	3	27	36	7
Mars — March 21. . . .	250	19	1	1	1	1	22	32	7
Avril — April 18. . . .	224	20	0	0	0	1	23	32	10
Mai — May 16. . . .	208	8	0	3	0	1	15	20	8
Juin — June 13. . . .	216	8	1	2	0	0	15	24	9
Juillet — July 11. . . .	178	11	0	2	1	0	10	17	8
Août — August 8. . . .	176	10	0	3	0	0	9	27	4
Septembre — September 5. . . .	171	9	0	3	1	0	9	26	6
Octobre — October 3. . . .	185	8	0	0	0	0	9	20	4
» — » 31. . . .	216	8	0	0	0	0	17	24	8
Novembre — November 28. . . .	218	11	0	1	0	0	18	25	2
Décembre — December 26. . . .	234	8	0	4	0	1	25	32	3
1926 Janvier — January 2* . . .	69	3	0	1	0	0	9	6	1

		1919	1920	1921	1922	1923	1924	1925
Erysipèle	Erysipelas	—	—	—	—	—	7	8
Fièvre typhoïde	Enteric fever	6	5	5	8	5	2	2
Méningite cérébro-spinale	Cerebro-spinal meningitis	—	—	—	—	—	2	1
Rougeole	Measles	3	16	12	12	4	4	1
Scarlatine	Scarlet fever	3	4	0	2	1	1	0

* Une semaine seulement. — One week only.

STOCKHOLM

(Population : 438 896. R. 1. janv. 1925.)

Source : Vecköversikt av Stockholms Sanitära Statistik.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Bronchite aiguë et chronique Acute and chronic Bronchitis	Coqueluche Whooping-cough	Gastro-entérite aiguë Acute gastro-enteritis	Diphtérie Diphtheria	Fièvre puerpérale Puerperal Fever	Fièvre typhoïde Enteric Fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal Meningitis	Pneumonie et broncho-pneumonie Pneumonia and broncho-pneumonia	Poliomyélite aiguë Acute Poliomyelitis	Scarlatine Scarlet Fever	Tuberculose pulmonaire Pulmonary Tuberculosis	Tuberculose, autres formes Tuberculosis,
Total 1919	5783	309	85	9	37	60	25	12	920	3	284	12	34	824	163
» 1920	4830	383	71	14	39	50	20	10	139	4	209	2	22	743	130
» 1921	4661	379	78	6	46	19	18	4	32	6	207	0	8	581	119
» 1922	4804	293	97	15	18	11	15	4	174	6	213	0	9	611	120
» 1923	4630	291	79	6	32	20	20	2	8	4	172	12	5	553	106
» 1924	4737	276	85	7	25	27	21	2	74	3	150	2	5	616	109
» 1925	4909	233	71	14	33	22	13	4	33	13	202	6	4	577	98
Janvier — January	430	28	6	3	3	4	1	0	1	1	8	0	2	51	9
Février — February	388	22	9	0	2	1	0	1	0	1	20	0	0	41	8
Mars — March	420	20	6	1	1	0	1	1	2	0	21	1	0	42	12
Avril — April	442	27	11	0	3	1	0	2	4	0	24	0	1	64	6
Mai — May	486	26	8	0	3	2	2	0	16	1	31	0	0	65	11
Juin — June	406	20	3	6	5	0	1	0	4	4	14	0	0	43	8
Juillet — July	434	19	4	1	2	0	3	0	1	2	9	0	0	57	9
Août — August	311	13	2	0	2	1	2	0	0	1	14	1	1	43	5
Septembre — September	341	17	5	2	1	0	2	0	1	2	11	2	0	37	3
Octobre — October	410	16	4	1	5	5	0	0	0	0	17	2	0	42	7
Novembre — November	365	12	8	0	5	4	1	0	2	1	13	0	0	33	9
Décembre — December	476	13	5	0	1	4	0	0	2	0	20	0	0	59	11

		1919	1920	1921	1922	1923	1924	1925
Encéphalite léthargique	Encephalitis lethar.	—	16	9	7	11	2	3
Rougeole	Measles	37	11	13	0	20	19	1

SUISSE (26 villes) — SWITZERLAND (26 cities)

(Population : 1 106 500. E. 1. janv. 1924.)

Sources : Mouvement de la population en Suisse. — Bulletin des Eidgenössischen Gesundheitsamtes.

Période de quatre semaines se terminant le: Four-week period ending:	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarr. et entérite jusqu'à 1 an Diarrhœa & enteritis under 1 year	Diphtérie Diphtheria	Encéphalite léth. Encephalitis leth.	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvre typhoïde Enteric fever	Grippe Influenza	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	13072	1021	52	156	115	—	24	52	15	—	30	12	1753	574
» 1920	13262	1147	66	219	99	99	27	63	15	1248	82	18	1487	470
» 1921	12233	1051	18	201	83	18	27	55	20	104	22	16	1166	378
» 1922	12361	908	49	84	41	7	24	36	14	355	5	14	1334	417
» 1923	10513	689	29	98	41	27	23	38	10	128	26	7	1237	355
» 1924	11275	709	23	88	49	19	25	16	14	383	10	6	1580	559
» 1925	11319	704	41	68	29	12	19	8	16	221	21	8	1124	363
Janvier — Jan. 24	884	42	2	6	5	0	2	0	1	22	1	0	72	26
Février — Febr. 21	979	76	3	6	2	0	2	0	0	37	2	2	76	30
Mars — March 21	971	58	3	1	2	2	0	0	1	46	1	0	105	33
Avril — April 18	1041	66	7	8	1	3	2	0	0	59	4	1	100	38
Mai — May 16	882	62	4	4	2	2	1	0	0	17	5	0	106	40
Juin — June 13	824	58	4	7	3	0	2	0	0	6	2	0	93	38
Juillet — July 11	750	53	4	8	1	3	2	0	0	2	1	0	81	19
Août — August 8	709	36	4	4	1	1	0	0	3	5	2	1	85	23
Sept. — Sept. 5	717	53	4	7	1	0	1	1	0	5	0	2	70	21
Octobre — October 3	764	49	2	5	2	1	2	1	0	0	0	0	82	17
Octobre — Octob. 31	769	44	0	4	0	0	2	1	4	5	2	1	70	19
Novem. — Nov. 28	829	41	1	5	5	0	3	4	4	5	1	0	64	30
Décem. — Decem. 26	989	53	3	2	4	0	0	1	2	11	0	1	95	23
1926 Janvier — Jan. 2	211	13	0	1	0	0	0	0	1	1	0	0	18	6

	1919	1920	1921	1922	1923	1924	1925
Variole — Smallpox	0	0	6	1	—	0	0

* Une semaine seulement. — One week only.

TALLINN (Reval)

(Population : 126 557. R. 1. janv. 1926.)

Source : Rapports du Bureau central de Statistique. — Reports from Central Bureau of Statistics.

Cause de décès — Cause of death		Total 1921	Total 1922	Total 1923	Total 1924	Total 1925	1925 Janv. Jan.	Févr. Feb.	Mars March	Avril April	Mai May	Juin June	Juill. July	Août Aug.	Sept. Sept.	Oct. Oct.	Nov. Nov.	Déc. Dec.
Décès, toutes causes	Deaths, all causes	1463	1723	1564	1663	1647	166	143	157	156	171	107	120	118	110	126	129	144
Décès de 0 à 1 an	Deaths up to 1 year	138	174	143	149	120	15	10	5	11	17	9	9	14	5	4	15	6
Diphtérie	Diphtheria	19	10	1	0	8	0	1	1	0	0	0	0	0	2	1	3	0
Fièvres typh. et paratyphoïde	Enteric fever	10	13	19	10	6	0	0	0	1	1	0	0	3	1	0	0	0
Grippe	Influenza	10	47	5	8	8	2	0	1	1	1	1	0	0	0	0	1	1
Méningite cérébro-spinale	Cerebro-spinal meningitis	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0
Pneumonie	Pneumonia	86	101	138	121	122	18	11	12	12	10	3	2	5	10	13	12	13
Tuberculose, toutes causes	Tuberculosis, all forms	219	269	286	345	348	29	29	37	40	42	21	32	21	22	26	22	27

	1921	1922	1923	1924	1925
Coqueluche — Whooping-cough . . .	1	10	3	0	4
Scarlatine — Scarlet fever.	35	11	12	16	1

VIENNE — VIENNA

(Population : 1 869 850. E. août 1925.)

Source : Statistische Mitteilungen der Stadt Wien.

Mois — Month	Décès, toutes causes Deaths, all causes	Décès de 0 à 1 an Deaths up to 1 year	Coqueluche Whooping-cough	Diarrhée et entérite jusqu'à 2 ans Diarrhœa and enteritis under 2 years	Diphtérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalitis lethar.	Erysipèle Erysipelas	Fièvre puerpérale Puerperal fever	Fièvres typhoïde et paratyphoïde Enteric fever	Grippe Influenza	Méningite cérébro-spinale Cerebro-spinal meningitis	Pneumonie * Pneumonia *	Rougeole Measles	Scarlatine Scarlet fever	Tuberculose pulmonaire Pulmonary tuberculosis	Tuberculose, autres formes Tuberculosis, other forms
Total 1919	40932	—	198	756	110	584	—	—	—	170	533	—	2904	124	53	8539	2067
» 1920	34197	—	179	895	125	—	—	—	—	111	1119	—	3078	315	90	5660	1804
» 1921	28297	—	79	889	71	—	—	—	—	121	99	—	2274	44	42	3936	1329
» 1922	30068	—	175	777	63	—	—	—	—	85	282	—	2909	8	40	4342	1210
» 1923	25480	3040	153	444	119	38	—	—	—	49	80	10	2019	75	39	3794	836
» 1924	25552	2684	277	357	114	33	7	—	—	75	81	20	2103	27	29	3496	708
» 1925	22817	1640**	98	374	66	26	13	91	129	80	67	14	1985	47	77	2919	739
Janvier — January	2163	225	11	27	17	2	4	9	13	1	15	1	244	9	11	286	67
Février — February	1910	197	15	30	8	0	1	11	12	4	7	0	185	9	11	203	96
Mars — March	2103	225	14	31	9	2	0	7	14	9	10	1	188	9	11	295	83
Avril — April	2038	199	4	34	9	4	1	11	11	6	16	2	233	7	14	269	60
Mai — May	1787	159	15	22	1	0	1	5	7	4	6	1	132	8	7	239	58
Juin — June	1689	134	6	23	1	1	1	7	11	6	1	1	114	3	5	260	59
Juillet — July	1692	167	5	42	1	3	0	13	9	4	2	0	121	0	7	246	68
Août — August	1514	156	3	36	4	5	1	6	8	17	2	2	105	0	2	204	49
Septembre — September	1750	178	10	56	1	4	1	5	9	11	1	2	125	1	3	196	45
Octobre — October	1815	—	6	26	3	3	0	5	12	15	1	2	147	0	2	227	48
Novembre — November	1974	—	7	22	2	1	2	7	13	0	3	2	151	0	1	247	40
Décembre — December	2382	—	2	25	10	1	1	5	10	3	3	0	240	1	3	247	66

* Y compris la pleurésie. — Including pleurisy.
** Total pour neuf mois seulement. — Total for nine months only.

TABLEAU INDIQUANT LES MALADIES A DÉCLARATION OBLIGATOIRE DANS DIFFÉRENTS PAYS DU MONDE

TABLE SHOWING NOTIFIABLE DISEASES IN VARIOUS PARTS OF THE WORLD

MALADIES A DÉCLARATION OBLIGATOIRE DANS DIFFÉRENTS PAYS DU MONDE

| MALADIES | EUROPE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | AFRIQUE — AFRICA | | | | | | | | | | | | | | | | | | |

NOTIFIABLE DISEASES IN VARIOUS PARTS OF THE WORLD

| AMÉRIQUE — AMERICA | | |

ndardisation of Sera, Serological Reactions and Biological Products :

REPORT ON THE INTERNATIONAL CONFERENCE ON THE STANDARDISATION OF SERA AND SEROLOGICAL TESTS, convened by the Health Committee of the League of Nations and held on December 12th to 14th, 1921, at the British Ministry of Health, London. (French and English texts.) (C.533.M.378.1921.III.)	1/6	$0.30
REPORT ON THE SECOND INTERNATIONAL CONFERENCE ON THE STANDARDISATION OF SERA AND SEROLOGICAL TESTS, convened by the Health Committee of the League of Nations and held from November 20th-26th, 1922, at the Pasteur Institute, Paris	1/-	$0.25
REPORT ON SEROLOGICAL INVESTIGATIONS, presented to the Second International Conference on the Standardisation of Sera and Serological Tests, held at the Pasteur Institute in Paris in November 1922	8/-	$2.—
REPORT ON THE EUROPEAN HEALTH CONFERENCE held at Warsaw from March 20th-28th, 1922	1/6	$0.50
REPORT ON THE TECHNICAL CONFERENCE FOR CONSIDERATION OF CERTAIN METHODS OF BIOLOGICAL STANDARDISATION, Edinburgh, from July 19th-21st, 1923	4d.	$0.05
INVESTIGATIONS ON THE SERODIAGNOSIS OF SYPHILIS. Report of the Technical Laboratory Conference held at Copenhagen, November 19th to December 3rd, 1923. (Two Annexes.) (C.5.M.5.1924.III.) (C.H.148.)	3/6	$0.80
THE STANDARDISATION OF DYSENTERY SERUM, by Kiyoshi Shiga, H. Kawamura, and K. Tsuychiya, The Kitasato Institute for Infectious Diseases, Tokyo:		
First Report. (C. 177. M. 49. 1924. III.)	1/6	$0.40
Second Report. (C. 177 (*a*). M. 49 (*a*). 1924. III.)	1/6	$0.40
SECOND INTERNATIONAL CONFERENCE ON THE BIOLOGICAL STANDARDISATION OF CERTAIN REMEDIES, convened by the Health Committee of the League of Nations and held from August 31st to September 3rd, 1925, at Geneva. (C. 532. M. 183. 1925. III.) (C. H. 350.) (English and French texts.)	1/-	$0.25
THE BIOLOGICAL STANDARDISATION OF INSULIN, INCLUDING REPORTS ON THE PREPARATION OF THE INTERNATIONAL STANDARD AND THE DEFINITION OF THE UNIT. (1926. III. 7.)	1/6	$0.40

anisation and Work of National Health Services :

PUBLIC HEALTH SERVICES IN GERMANY, by Dr. Gottfried Frey, Medical Director, Reichsgesundheitsamt, Berlin. (C.820. M. 309. 1923. III.) (C. H. 140.)	1/3	$0.30
PUBLIC HEALTH SERVICES IN AUSTRIA, by Dr. Herman Schroetter. (C. 825. M. 314. 1923.) (C.H. 141.)	1/3	$0.30
ORGANISATION OF THE PUBLIC HEALTH SERVICES IN THE KINGDOM OF THE NETHERLANDS, by Dr. N. M. Josephus Jitta, President of the Health Council. (C. H. 209.)	9d.	$0.20
PUBLIC HEALTH SERVICES IN HUNGARY, compiled from "Public Hygiene in Hungary" of Aladar de Fay, Under-Secretary of State, by Alexander de Dobrovits, M.D., Councillor of Section in the Royal Hungarian Central Statistical Office. (C. H. 265.)	1/3	$0.30
ORGANISATION OF THE PUBLIC HEALTH SERVICES IN CZECHOSLOVAKIA, by Hynek J. Pelc, M.D., D.P.H. (C. H. 268.)	2/6	$0.60
L'HYGIÈNE PUBLIQUE DANS LA POPULATION RURALE DE L'UKRAINE, par le Dr S. A. Tomiline. (Résultats de l'enquête sanitaire et démographique entreprise en 1923 parmi la population rurale de l'Ukraine (C. H. 279.) (In French only.)	1/3	$0.30
ORGANISATION OF THE PUBLIC HEALTH SERVICES IN LATVIA, by Dr. H. J. Cazeneuve (C. H. 283.)	1/9	$0.40
ORGANISATION OF THE PUBLIC HEALTH SERVICES IN THE KINGDOM OF THE SERBS, CROATS AND SLOVENES, by Dr. A. Stampar, Head of the Health Section of the Ministry of Public Health at Belgrade (C. H. 326.)	1/3	$0.30
PUBLIC HEALTH SERVICES IN AUSTRALIA, by Dr. J. H. L. Cumpston, Director-General of Health, Commonwealth of Australia, and Dr. Frank McCallum. (1926. III. 1.)	1/6	$0.40
INTERNATIONAL HEALTH YEAR-BOOK, 1924. Reports on the Public Health Progress of Twenty-two Countries. (C.H.349.)	12/-	$3.00

xchange Conferences :

L'ORGANISATION SANITAIRE DES PAYS-BAS. 29 conférences données à l'occasion du voyage d'études organisé par l'Organisation d'Hygiène de la Société des Nations, avril-mai 1924. (C. H./E. P. S. 148.) (In French only.)	4/-	$1.—
HEALTH ORGANISATION IN DENMARK. (C. H./E. P. S. 149.)	8/-	$2.—
HEALTH ORGANISATION IN DENMARK. Supplement to Doc. C. H./E. P. S./49. (1926. III. 4.)	1/3	$0.30
HEALTH ORGANISATION IN JAPAN: Thirty-six Conferences given in Japan on the occasion of the Interchange Study Tour organised for Medical Officers of Health from the Far Eastern Countries by the Health Organisation of the League of Nations, October to December 1925. (C. H. 332.)	5/-	$1.20

ites of the Provisional Health Committee :

FIRST SESSION (Geneva, August 25th-29th, 1921.) (C.40.M.280.1921.III.) (English and French texts.)	Out of print.	
SECOND SESSION (Paris, October 20th-22nd, 1921.) (C.471.M.346.1921.III.) (English and French texts.)	Out of print.	
THIRD SESSION (Paris, May 11th-16th, 1922.) (C.336.M.217.1922.III.) (English and French texts.)	2/-	$0.40
FOURTH SESSION (Geneva, August 14th-21st, 1922.) (C.555.M.337.1922.III.) (English and French texts.)	Out of print.	
FIFTH SESSION (Geneva, January 8th-13th, 1923.) (C.27.M.13.1923.III.)	Out of print.	
SIXTH SESSION (Paris, May 26th-June 6th, 1923.) (C.424.M.187.1923.III.)	5/-	$1.20
REPORT ON THE WORK OF THE SIXTH SESSION. (A.28.1923.III.)	6d.	$0.05

ites of the Health Committee :

FIRST SESSION (Geneva, February 11th-21st, 1924.) (C.10.M.7.1924.III.)	4/6	$1.10
SECOND SESSION (Paris, May 7th-10th, 1924.) (C.213.M.69.1924.III.)	1/-	$0.25
THIRD SESSION (Geneva, September 29th-October 4th, 1924.) (C.488.M.202.1924.III.)	3/-	$0.70
FOURTH SESSION (Geneva, April 20th-25th, 1925.) (C.224.M.80.1925.III.)	6/-	$1.40
Report of the Second Committee to the Assembly. (A.79.1925.III.)	4d.	$0.10
Report of the Health Committee to the Sixth Assembly. (A.15.1925.III.)	3d.	$0.10
FIFTH SESSION (Geneva, October 8th-14th, 1925.) (C.647.M.236.1925.III.)	3/9	$0.90
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Geneva, September 15th, 1926.

LEAGUE OF NATIONS

REPORT ON THE WORK OF THE HEALTH ORGANISATION

presented to the Assembly by the Second Committee.

(Rapporteur: M. Benjamin Fernandez y Medina *(Delegate of Uruguay.)*

The report of the Health Organisation of the League and that of the Secretary-General have furnished us with a detailed account of the action taken by the Health Committee in pursuance of the recommendations of the Assembly with regard to the various proposals made last year. We have had one more opportunity of realising the efficiency of the Organisation's work and the progress which has been made in this particular field of League activity, which is undoubtedly among the most interesting and the most generally appreciated by the public.

Attention must first be drawn to the universality of the Health Organisation's work: the Health Committee has succeeded during the last twelve months in establishing very close relations with the Health Administrations of the Far East. We are under an obligation, in the first instance, to the Japanese Government for all that it has done to facilitate the detailed study of its excellent health administration by a group of health officers appointed by the Health Administrations of Far Eastern countries, some of whom were the chiefs of those services. A wealth of information, a series of very careful investigations, together with the personal contact established with the Health Administrations of British India, the Philippines, New Zealand, Australia, Siam, French Indo-China, China, the Soviet Republic, the Far East and the Dutch Indies, will render possible a valuable system of collaboration in the solution of common problems.

Our colleague His Highness the Maharaja of Kapurthala has already laid stress in the Assembly on the rôle which the League can play in Asia in its struggle against plague, cholera and other diseases.

Our Health Committee has succeeded in establishing a permanent system of collaboration with its Japanese colleagues, whose work deserves wider recognition, through the intermediary of a Co-ordination Committee, which draws up monographs every year based upon the research work carried out in Japan. These monographs, which are included in our series of publications, will enable the doctors of the West to become acquainted with the progress of every description achieved in Japan. This admirable system of collaboration is further strengthened by the organisation of an exchange of Japanese and Western health experts and public health officials, to whom our Health Organisation has given an opportunity of investigating certain problems of special importance to the Administrations concerned. This investigation will be carried out both in Japan and in the countries of the West, and will last for a period of nine months.

His Highness the Maharaja of Kapurthala also laid emphasis, in addressing the Assembly, upon the rôle played by the Epidemiological Intelligence Bureau of Singapore, in whose work all the countries of the Far East co-operate. This first institution of the League of Nations in the Far East serves both to satisfy the immediate needs of the Administrations of the Far East, with which it co-operates in the struggle against epidemic diseases, and also to meet the requirements of the Health Administrations of all countries, whether Members of the League or not, which are thus enabled for the first time to obtain direct information with regard to epidemics arising in the East. Last year at this period, 50 ports were in telegraphic communication with the Singapore Bureau; this number has recently increased and now amounts to 108.

The Second Committee was accordingly unanimous in accepting the Japanese delegation's proposal[1], which was strongly supported by the proposal of the delegation of India, that an appropriation should be made in the League Budget for the expenses of the Bureau. The Committee fully realised the high importance of the work of the Bureau as the first League institution in the Far East, and the value of its activities not merely to the Health Departments of the countries in that part of the world but to all the States Members of the League.

The Advisory Committee of our Singapore Bureau is presided over by the head of the Health Administration of British India, while the Vice-Chairmen represent the Health Administrations

[1] This proposal has now been passed to the Fourth Committee.

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of French Indo-China, Japan, the Dutch Indies, Siam and China. It enables the Health Committee — which has accepted the task with the consent of the Council — to initiate and co-ordinate investigations and research work bearing upon vaccination against cholera, the endemic centres of this terrible disease, and the measures to be taken to prevent the risk of the outbreak of an epidemic of pulmonary plague in Manchuria. It has also drawn our attention to the desirability of the League's taking an interest in social hygiene problems in the countries of the Far East. The annual report gives full details of this work, which is singularly deserving of encouragement and peculiarly consonant with the ideas and policy of the League of Nations.

The success of the Singapore Bureau has been definitely established and already one can foresee the possibility of setting up other regional bureaux on the same lines, in order to facilitate the collection and distribution of epidemiological and general health intelligence.

No less successful results have been achieved in another part of the East, in Persia, thanks to the enquiry which was undertaken two years ago by the Health Committee, and to the subsequent steps which were taken.

It is not, however, only in the East that efforts have been made to encourage further collaboration between Health Services. An interchange was arranged among medical officers in the Colonial Services of Senegal, Gambia, Portuguese and French Guinea, the Ivory Coast, Togoland, the Gold Coast, Nigeria, Dahomey, Sierra Leone and South Africa, who visited the various colonies during several weeks in groups in order to investigate in the most detailed manner the working of the medical and public health services.

This journey threw important new light on many subjects; the mutual exchange of theory and experience gained under particularly arduous conditions will make it possible to apply in other countries the definite results obtained in most of the colonies which were visited. The direct benefit will accrue to the native inhabitants themselves. It should in particular be noted that what appears to have been most valuable to those taking part in the interchange is the examination of the results obtained by the schools for native male nurses and doctors, and by the treatment in hospitals, according to the common practice, of the sick of the native population.

On the occasion of this interchange, efforts were made to obtain the views of the sanitary and medical administrations of the colonies as to the desirability of establishing an epidemiological intelligence bureau in Western Africa in pursuance of the recommendation expressed by the last ordinary session of the Assembly.

This question is still under consideration by the Health Committee, which has decided to carry out an experiment at Algiers and proposes to put forward definite recommendations at its October Session.

In Africa again the Health Organisation is engaged, through the intermediary of an international commission composed of Belgian, British, French, German and Portuguese experts, in investigating a series of practical and theoretical problems with regard to the distribution and prevention of sleeping-sickness in Equatorial Africa. You are all aware of the great economic and general importance of this research, and you will all be ready to say that you are following with keen sympathy the often dangerous work of these scientists in the tropical bush.

It is highly desirable that the Health Organisation should show similar activity in Latin America. We may recall with satisfaction the efforts which have been made to enable health officers of Latin America to take part in the various investigations and interchanges. There is also a new step to be recorded: a Brazilian specialist has been given the opportunity of investigating in Japan, for a period of nine months, the parasitic diseases prevalent among Japanese emigrants to Brazil. The Japanese Government and the Health Committee are to be congratulated upon the proof which they have given of the practical application of the system of interchanges and individual fellowships.

The number of experts of Latin-American countries who take part in the work of the technical commissions of the Health Organisation is increasing year by year. We trust that specialists in child-welfare questions and the campaign against infant mortality will soon be attached to the group of experts which the Health Committee, in accordance with the recommendation presented by the Netherlands delegation to the last ordinary session of the Assembly, has appointed for the study of this problem of prime importance to all countries.

Infant mortality, important though it is, is only one of many problems which together make up the question of child welfare. The Committee therefore displayed the keenest interest in the proposal made by M. Veverka, delegate of Czechoslovakia, who is asking the Council to request the Committee to embody in its programme the study of physical training including school hygiene and to consider whether there are any special problems in connection with which it would be useful to undertake a comparative investigation and to co-ordinate the researches and enquiries carried out in different countries.

As long ago as 1924, Dr. Caballero, delegate of Paraguay, drew the attention of the Assembly to the question of physical training, and succeeded in having a recommendation made to the Health Committee that it should consider the desirability of investigating this question. The proposals of the Cuban and Paraguayan delegations bear witness to the interest which the Latin-American countries evidently take in all such questions. It will undoubtedly be a useful step to hold a meeting in Latin America of experts representing these countries, who will, the Committee hopes, take part in the work of the body of experts appointed by the Health Committee to make an exhaustive study of the question. The Assembly will doubtless be delighted to see this idea carried out.

The Second Committee, in adopting the various resolutions proposed, does so with the intention of leaving to the Health Committee freedom to study the possibility and advisability of giving effect to the same, it being understood that such investigations will entail no expenditure beyond what is provided for in normal budgetary credits.

RESOLUTION.

" The Assembly:

" Having taken note of the reports dealing with the work of the Health Organisation (documents A.6.1926., A.6 (*a*).1926 and A.17.1926.), notes with satisfaction the growth and increasing usefulness of that work with its tendency to universality;

" Expresses its gratification at the work undertaken and the results obtained by the Health Committee and its organs as well as by the various experts entrusted with special missions, and wishes to express its sympathetic interest with the scientists of the International Commission on Sleeping-Sickness who are conducting their sometimes dangerous enquiry in Equatorial Africa.

" The Assembly notes with satisfaction the close collaboration established with the sanitary and medical authorities of Japan as a result of the interchange and the conferences held in that country; and with the sanitary administrations of other Far-Eastern countries, through the intermediary of the Advisory Council of the Epidemiological Intelligence Bureau of the League at Singapore;

" Notes in particular the plan of research work and special enquiries into health problems of the Far East in which the administrations of British India, China, the Dutch Indies, French Indo-China, Japan, the Philippine Islands and Siam have promised their assistance;

" And requests the Council to refer the resolutions proposed by the Cuban [1], Czechoslovak [2] and Uruguayan [3] delegations to the Health Committee for consideration."

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1 " The Second Committee, in conformity with the resolutions of the Fifth and Sixth Ordinary Sessions of the Assembly on the subject of infant mortality and the protection of children, requests the Council to ask the Health Committee to consider to what extent it could, at a suitable time, enlarge its scheme of international enquiry to include other problems of eugenics. "

2 " The Second Committee, considering the importance of physical culture as a means for preventing disease and in view of the interest which numerous countries take in that question, asks the Council to instruct the Health Committee to consider the inclusion in the programme of its work of the international investigation of physical culture, including holastic hygiene, and to decide what special problems may necessitate a comparative study and a co-ordination of national research work and national enquiries. "

3 " The Second Committee, having taken note that the International Economic Conference's plan of enquiry is to include an examination of the problems of nutrition (document A. 24. 1926. II), points out the interest which would attach to the supplementing of this enquiry by a study of the problem from the standpoint of race improvement. This study should take into account the work of the Health Organisation regarding infant mortality, as well as the reports of the Japanese Institute of Research into Nutrition Problems comprised in the publications of the Health Committee. "

[Communiqué au Conseil, aux Membres de la Société et aux délégués à la septième session ordinaire de l'Assemblée.]

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A. 112. 1926. III.

SEPTIÈME SESSION ORDINAIRE DE L'ASSEMBLÉE DE LA SOCIÉTÉ DES NATIONS

TRAVAUX DE L'ORGANISATION D'HYGIÈNE

Résolution adoptée par l'Assemblée le 24 septembre 1926 (après-midi)

sur la proposition de la deuxième Commission.

L'Assemblée,

Ayant pris connaissance des rapports relatifs à l'œuvre de l'Organisation d'hygiène (Documents A. 6. 1926, A. 6(*a*). 1926 et A. 17. 1926) constate avec satisfaction que son action devient toujours plus grande et plus utile et tend à devenir universelle,

Se félicite des efforts poursuivis et des résultats obtenus par le Comité d'hygiène et ses organes, ainsi que par les diverses personnalités chargées de missions spéciales et assure sa sympathie et son intérêt aux savants, membres de la Commission internationale de la maladie du sommeil, qui poursuivent des travaux parfois dangereux, en Afrique équatoriale;

Elle se réjouit de la collaboration intime établie avec les autorités sanitaires et médicales du Japon, comme suite à l'échange et aux conférences qui ont eu lieu dans ce pays, ainsi qu'avec les administrations sanitaires d'autres pays d'Extrême-Orient, grâce à l'intermédiaire du Comité consultatif du Bureau de renseignements épidémiologiques de la Société à Singapour;

Relève particulièrement le programme des recherches et des enquêtes spéciales sur les problèmes d'hygiène de l'Extrême-Orient auxquelles ont promis leur concours les administrations de la Chine, des Iles Philippines, des Indes britanniques, des Indes néerlandaises, de l'Indochine, du Japon et du Siam;

Et prie le Conseil de renvoyer à l'examen du Comité d'hygiène les résolutions soumises par les délégations de Cuba[1], de la Tchécoslovaquie[2] et de l'Uruguay[3].

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[1] La deuxième Commission, conformément aux résolutions des cinquième et sixième sessions ordinaires de l'Assemblée sur la mortalité infantile et la protection de l'enfance, prie le Conseil d'inviter le Comité d'hygiène à examiner dans quelle mesure il pourrait, au moment opportun, étendre aux autres problèmes de l'eugénisme son plan d'études internationales.

[2] La deuxième Commission, considérant l'importance de l'éducation physique comme moyen de prévenir les maladies et considérant l'intérêt que portent de nombreux pays à cette question, prie le Conseil d'inviter le Comité d'hygiène à examiner l'opportunité d'inclure dans le programme de ses travaux l'étude internationale de l'éducation physique, y compris l'hygiène scolaire, et à examiner quels sont les problèmes particuliers qui peuvent nécessiter une étude comparative et une coordination de recherches et d'enquêtes nationales.

[3] La deuxième Commission, en constatant que le plan d'étude de la Conférence économique internationale comprend l'étude du problème de l'alimentation (document A. 24. 1926. II), attire l'attention sur l'intérêt qu'il y aurait à suppléer cette enquête par une étude du problème au point de vue de l'amélioration de la race. Cette étude tiendrait compte notamment des travaux de l'Organisation d'hygiène relatifs à la mortalité infantile, ainsi que des travaux de l'Institut japonais de recherches sur le problème de l'alimentation inclus dans la documentation du Comité d'hygiène.

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A. 112. 1926. III.

SEVENTH ORDINARY SESSION OF THE ASSEMBLY OF THE LEAGUE OF NATIONS.

WORK OF THE HEALTH ORGANISATION

Resolution adopted by the Assembly at its meeting held on September 24th, 1926 (afternoon).

(Adopted on the proposal of the Second Committee.)

The Assembly:

Having taken note of the reports dealing with the work of the Health Organisation (documents A.6.1926., A.6 (*a*).1926 and A.17.1926.), notes with satisfaction the growth and increasing usefulness of that work with its tendency to universality;

Expresses its gratification at the work undertaken and the results obtained by the Health Committee and its organs as well as by the various experts entrusted with special missions, and wishes to express its sympathetic interest with the scientists of the International Commission on Sleeping-Sickness who are conducting their sometimes dangerous enquiry in Equatorial Africa.

The Assembly notes with satisfaction the close collaboration established with the sanitary and medical authorities of Japan as a result of the interchange and the conferences held in that country; and with the sanitary administrations of other Far-Eastern countries, through the intermediary of the Advisory Council of the Epidemiological Intelligence Bureau of the League at Singapore;

Notes, in particular, the plan of research work and special enquiries into health problems of the Far East in which the administrations of British India, China, the Dutch Indies, French Indo-China, Japan, the Philippine Islands and Siam have promised their assistance;

And requests the Council to refer the resolutions proposed by the Cuban [1], Czechoslovak [2] and Uruguayan [3] delegations to the Health Committee for consideration.

---

[1] The Second Committee, in conformity with the resolutions adopted by the Assembly at its fifth and sixth ordinary sessions on the subject of infant mortality and the protection of children, requests the Council to ask the Health Committee to consider to what extent it could, at a suitable time, enlarge its scheme of international enquiry to include other problems of eugenics.

[2] The Second Committee, considering the importance of physical culture as a means for preventing disease and in view of the interest which numerous countries take in that question, asks the Council to instruct the Health Committee to consider the inclusion in the programme of its work of the international investigation of physical culture, including scholastic hygiene, and to decide what special problems may necessitate a comparative study and a co-ordination of national research work and national enquiries.

[3] The Second Committee, having taken note that the International Economic Conference's plan of enquiry is to include an examination of the problem of nutrition (document A. 24. 1926. II), points out the interest which would attach to the supplementing of this enquiry by a study of the problem from the standpoint of race improvement. This study should take into account the work of the Health Organisation regarding infant mortality, as well as the reports by the Japanese Institute of Research into Nutrition Problems comprised in the publications of the Health Committee.

Communiqué au Conseil, aux Membres de la Société et aux délégués à la septième session ordinaire de l'Assemblée.]

A. 112 (a). 1926. IV.

Genève, le 27 septembre 1926.

SEPTIÈME SESSION ORDINAIRE DE L'ASSEMBLÉE DE LA SOCIÉTÉ DES NATIONS

TRAVAUX DE L'ORGANISATION D'HYGIÈNE

Deuxième résolution adoptée par l'Assemblée le 24 septembre 1926 (après-midi)

sur la proposition de la deuxième Commission[1].

L'Assemblée,

Considérant l'importance de l'œuvre accomplie par le Bureau des renseignements épidémiologiques de Singapour, première institution de la Société des Nations en Extrême-Orient, considérant, d'autre part, l'utilité de son action non seulement pour les pays d'Extrême-Orient mais aussi pour d'autres Etats Membres de la Société,

Décide d'inscrire un crédit au budget de la Société pour les dépenses de ce Bureau pour l'exercice 1927.

[1] Voir document A. 112. 1926. III.

SEVENTH ORDINARY SESSION OF THE ASSEMBLY OF THE LEAGUE OF NATIONS

WORK OF THE HEALTH ORGANISATION

Second Resolution adopted by the Assembly at its meeting held on September 24th, 1926 (afternoon)

(Adopted on the proposal of the Second Committee) [1].

The Assembly,

In view of the importance of the work of the Singapore Bureau of Epidemiological Intelligence as the first institution of the League of Nations in the Far East, and in view of the utility of its work not only for the Far-Eastern countries but also for other States Members of the League,

Decides that provision for the expenses of the Bureau should be made in the Budget of the League for 1927.

[1] See document A. 112. 1926. III.

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Geneva, October 15th, 1926.

LEAGUE OF NATIONS

HEALTH ORGANISATION

Report of Permanent Standards Commission

(Geneva, October 11th-13th, 1926.)

1. **Anti-Diphtheritic Serum.** — Dr. Madsen pointed out that, in accordance with the resolution adopted at the Paris Conference of 1922, he had carried out tests with standard sera from London, Frankfort, Copenhagen and Washington, the last tests being made in September 1926, and had found these standard sera to be identical in titre.

2. **Anti-Tetanic Serum.** — A proposal was presented to the Commission by the Conference of Laboratories, which have participated since 1922 in the studies carried on to establish an international unit of anti-tetanic serum. On the recommendation of the Conference it was decided to define the new international unit as follows:

"The unit is to be determined with a standard serum in such a way that its relation to the American unit is exactly 2 international to 1 American unit.

"This resolution is the consequence of the proposals made to the Second International Serological Conference of 1922 by Professors Louis Martin and W. Kolle, and of the investigations carried out in the several laboratories since that date."

Dr. McCoy, Director of the Hygienic Laboratory at Washington, declared he had no authority to approve the new unit for the United States of America, but he could see no objection to American producers of anti-tetanic serum for export indicating on the labels the content of serum in terms of the new unit, as well as of the American unit.

The different institutes represented at the Conference will establish a standard conforming to the definition of the new international unit. In order to ensure that the sera used as standards by the different States have identical titre, the State Serum Institute of Denmark, which for this purpose acts as a central laboratory for the Health Committee of the League of Nations, will arrange for comparative studies of such sera to be carried out every year and will receive periodically samples of sera in order to carry out experimentally comparisons with such sera. The Commission took note of the fact that the Institute of Experimental Therapy of Frankfort-on-Main, after having prepared a standard serum, will continue to furnish this serum to all Institutes which make the request.

3. **Anti-Dysenteric Serum.** — The conference of Directors of Institutes who have participated in the study of anti-dysenteric serum, namely Professors Louis MARTIN, T. MADSEN, KOLLE, HIRSZFELD, DOERR and Doctors TSURUMI, O'BRIEN, DUMAS and DOUGLAS, made a proposal with regard to the continuation of the experiments which had been undertaken as a result of the work of the Committee for the study of anti-dysenteric serum. The Commission adopted the resolution, which was presented in the following terms:

"The method of assay for anti-dysenteric serum proposed by the State Serum Institute at Copenhagen, on the basis of the work carried out by the Committee for Investigation of Anti-Dysenteric Serum (President, Professor Shiga), constitutes a real advance on former methods.

"It is desirable to continue the trials by taking as standard the serum of the Copenhagen Institute. The Copenhagen Institute will send to each laboratory, every two months for

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a year, the standard serum, with an exact indication of the method of using this provisional unit.

"The laboratories concerned will send, every two months for a year, to Copenhagen, anti-dysenteric serum exactly assayed according to this method, with a view to confirmation of the results obtained.

"If all the results are in agreement, it will be possible to adopt a definitive international unit, in terms of the standard serum of Copenhagen. Only then will it be possible to make a clinical investigation of the therapeutic potency of sera of different origins."

The Commission decided to outline for all the Institutes participating in this study a definite technique for the use of the provisional unit which was adopted and for the studies which will be continued during the year 1927 (see Annex 1).

4. Anti-Meningococcus Serum. — The Commission is not in a position to recommend new studies on the standardisation of anti-meningococcus serum, since no new fact has come to light since the last International Serological Conference of 1922, which decided that none of the methods then in use could be recognised by all the experts as being certain enough to be utilised for the purpose of establishing a precise measure of the anti-body content or of the therapeutic value.

The identification of anti-meningococcic sera may be carried out by the determination of their content of specific anti-bodies by the method of complement-fixation or by the method of agglutination.

5. Anti-Pneumococcic Serum. — The problem of the standardisation of anti-pneumococcic serum has not yet reached a stage which permits the adoption of recommendations from the international point of view. The Commission does not desire to propose new studies, since no new observations have been added to those which are included in the Report of the Second International Serological Conference held in 1922.

6. Scarlet Fever. — The Commission, after a discussion on the new specific methods for the diagnosis, treatment and immunisation of scarlet fever, and recognising, on the one hand the importance of the problem and, on the other, the difficulty entailed in an attempt to make definite recommendations at the present time, decided to entrust to the American, British and Polish Institutes, in collaboration with the Copenhagen Institute, the study of these methods and requests its members to present a report at a subsequent session.

7. Tuberculin. — The Conference, having heard the communication of Dr. Tsurumi concerning the work of Professor Calmette, decides to initiate a comparison between the existing standards (Frankfort, Japan, Paris) for human and bovine tuberculin.

8. Dr. Madsen commented briefly on the present investigations of the tests for syphilis and on the work of the Smallpox and Vaccination Commission with regard to the standardisation of vaccine lymph.

9. Dr. Dale presented a short note on the progress made in the international standardisation of therapeutic substances by biological methods (Annex 2).

10. Professor Kolle extended an invitation to the Commission to hold its next session at Frankfort.

Members present:

Permanent Standardisation Commission.

President: Professor MADSEN.
» DALE.
» KOLLE.
» Louis MARTIN.
Dr. McCOY.

Tetanus Conference.

Professor Louis MARTIN.
» KOLLE.
» MADSEN.
Dr. McCOY.
» TSURUMI.

Dysentery Conference.

Professor KOLLE.
» DOERR.
Dr. DOUGLAS.
» DUMAS.
Professor HIRSZFELD.
» Louis MARTIN.
» MADSEN.
Dr. O'BRIEN.
» TSURUMI.

Annex 1.

The participating institutes will receive an ampoule containing 1 per cent solution of the lysentery standard serum (Copenhagen) in glycerinated saline (two-thirds glycerin, one-third normal saline), and one ampoule of standard toxin.

Of this toxin, an emulsion is made as follows:

The requisite amount of toxin is weighed out and added to the proper quantity of saline, some glass beads are poured in, and the bottle vigorously shaken until a homogeneous suspension is formed with no visible particles. After 45 minutes at 37 ° C. the emulsion is shaken again and, if necessary, may be kept in the ice-box until the following day. Before the testing, the shaking is repeated.

After the toxin ampoule has been once opened, it should be kept in a desiccator with phosphoric acid anhydrid.

After the mixtures of serum and toxin are made, the small tubes containing them are well shaken, kept for 45 minutes at 37° C. and again shaken before injection.

Doses of 0.5 c.c. each are injected into the tail veins of mice (15 to 20 gr.). The animals are to be kept under observation for seven days. Mice dying within 18 hours should not be included in the results, but should be indicated in the report.

Example:

10 doses of the toxin-antitoxin mixture (5 c.c.) is made.
Test dose of Toxin — 0.33 mg.

(1) An emulsion of the test toxin is made so that 0.33 mg. is contained in 0.1 cm
(2)

	1 dose	10 doses
Serum	0.02 c.c.	0.2 c.c.
Toxin	0.1 c.c.	1 c.c.
Salin.		3.8 c.c.

Of this, 0.5 c.c. is injected intravenously.

Six mice shall be used on each occasion that the serum is tested. The results may be recorded in tables similar to the sample attached.

SERUM Date of Titration.

Toxin :

Injection Volume 0.5 cm.

Serum dosis	Number of living	Number of dead	Per cent living	Date of death							
				S <18T	1st day	2nd day	3rd day	4th day	5th day	6th day	7th day

Dosis neutralisata.
„ non-neutralisata.

Annex 2.

NOTE TO THE PERMANENT STANDARDS COMMISSION ON PROGRESS MADE WITH THE INTERNATIONAL STANDARDISATION OF THERAPEUTIC SUBSTANCES BY BIOLOGICAL METHODS, PRESENTED BY DR. DALE.

Since the issue of the Report of the Conference which met at Geneva in September 1925, progress has been made in the following directions.

1. *Insulin.*

The international standard, adopted by the Conference, has been distributed to the appropriate authorities in a large number of different countries, and its use now may be said to be world-wide, so that a unit of insulin has everywhere the same meaning. An account of the method of preparing the standard, of the international tests on the basis of which its unit value was settled, and the methods to be used for determining the value of insulin preparations by comparison with the standard, has been published by the Health Organisation.

2. *Pituitary Substance.*

It was anticipated that no central supply of the standard substance would be required, since trials had shown that different makers, following the same routine in different laboratories and countries, could produce samples of indistinguishable activity. Nevertheless, applications have been made from different countries for samples of a central standard, and I have now obtained a quantity of some 50 grammes of the posterior lobe substance, extracted and dried with great care according to the U.S.P. method, and shall be able to meet requests of this kind.

3. *Digitalis, etc.*

The work on the three samples of digitalis powders, distributed for independent essay in different centres, is now practically complete. The results show that the different biological methods available (frog, cat, etc.) give results sufficiently concordant with one another, and with the clinical trials carried out with the same three digitalis powders, to justify the conclusion that the biological methods in use give a true and practical measure of the potency of these preparations. The preparation of the standard digitalis powder by Professor Magnus is now completed, and it is now being packed for distribution. A report showing the applicability of the same methods to strephanthus preparations, with g. strophanthin as a standard, has been received from Dr. Burn and Dr. Trevan.

4. *Salvarsan, etc.*

Samples of one of the standards which Professor Kolle is preparing — that of Neo-salvarsan — have been received and have been distributed for trial and report to several countries. The standard material prepared for the sulpharsenol (sulphars-phenamine) products has been received from Professor Voegtlin and will be distributed similarly for international trial, with the standards for old salvarsan, silver salvarsan, etc., as soon as these are available.

5. *Vitamin A.*

The scheme for comparing a series of cod-liver oils for their content of Vitamin A by the animal test on the one hand and a suggested colour-reaction on the other has been carried out. Professor Poulsson furnished a series of samples of cod-liver oil, and the tests on these by four independent biological experts, and by the colour-reaction, are nearing completion.

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LEAGUE OF NATIONS

Health Organisation

STUDIES

OF

CHOLERA IN JAPAN

BY

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GENEVA 1926

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ANNEX. 111

INTRODUCTION

Cholera in Japan is always an exotic disease. Trade-ships from China and India have been the carriers of cholera to our ports and, in spite of vigilant surveillance, the disease has invaded Japan from time to time, occasioning much loss of life and a large expenditure of money. Fortunately, however, the climate of Japan is not favourable for the cholera vibrio. Its virulence is highest in the summer and becomes attenuated in the autumn. Only rarely does the vibrio survive through the winter. The homes of cholera, where enormous numbers of lives are lost yearly, are near our door, so constant watch has to be kept against the invasion of the disease.

These facts have stimulated the study and establishment of various preventive measures, which, step by step, have attained the present efficiency. Concurrently, many bacteriologists have undertaken research concerning the cholera vibrio, and many valuable results have been obtained, notably with regard to culture methods, the study of variations and types of the vibrio, and improvements in the preparation of preventive vaccines. Some of the results of these investigations have been reported in a foreign language, but a far greater part of the literature is in Japanese and therefore inaccessible to most Western investigators.

It was on the invitation of the Health Organisation of the League of Nations that we undertook this work of compilation. The amount of published work on cholera in Japan is enormous, but we believe we have summarised almost all the more important contributions to the subject. References to the literature have been noted in each case.

STUDIES OF
CHOLERA IN JAPAN

Chapter I.

CULTURE MEDIA FOR CHOLERA.

1. Alkalinity.

The alkalinity of culture media for cholera has been studied with te object of facilitating the isolation of the cholera vibrio. The ıbrio is found almost in pure culture in the fæces of cholera patients. ıis is due to the special faculty of cholera vibrios of thriving in alka-ıe media. Oshida, in 1909, taking advantage of this fact, prepared te following medium:

Water	1,000 c.c.
Agar	25 gm.
Liebig's Meat Extract	7.5 gm.
Sodium chloride	5 gm.
Peptone (Witte)	40 gm.

After the above mixture has been completely dissolved, its reaction i made neutral to litmus with sodium carbonate. It is next clarified ·ith two eggs, and then made alkaline by the addition of 10 gm. of ɒtassium hydroxide and sterilised. The medium is divided in Petri ɕshes. The plates are then incubated for a day to remove gas from te medium. Oshida reported that this medium is very favourable ir the growth of cholera vibrios, but not favourable for other organisms.

In 1912, Ohno reported that not all strains of the cholera vibrio trive well in alkaline medium. Some strains grow better in a neutral ıedium or even in a weakly acid medium. Therefore he recommended tat peptone water of three different strengths of reactions be pre-ɒred :

	Per cent
Normal acid peptone water	0.3
Normal alkaline peptone water	0.5
Normal alkaline peptone water	1.3

Phenolphthalein was used as the indicator.

Nakadate, in 1920, studied these media with a strain of choler vibrio isolated from a patient in Eiko, Manchuria. He reported tha when alkalinity of a phenolphthalein neutral 2 % peptone wate is increased with crystal sodium carbonate, the growth of the vibri is most favourable at 0.6 per cent alkalinity; with degrees of alkalinit in excess of this, the growth is poor; and above 1.5 per cent alkalinit there is no growth. He also stated that there is a variation in th alkaline resistibility of strains of cholera vibrios in different epidemic

Matsuo, in 1924, attempted to find the optimum alkalinity o peptone water for isolation of cholera vibrios by carefully determin ing the H ion concentration. His results show that the range of growt of the cholera vibrio is from PH 4.5 to 11.3, while that of the colo bacilli is from PH 3.0 to 10.8. The cholera vibrio thrives very well in medium with PH of from 9 to 10, but at this H ion concentration th growth of colon bacilli is greatly hindered. He therefore recommende a peptone water having PH of from 9 to 10.

Ando and Yoshioka also studied the influence of H ion concen tration on the growth of the cholera vibrio, and they found certai differences with different strains and media. As a rule, howeve the optimum H ion concentration is only slightly higher than tha for other organisms. The best growth is obtained with media havin PH of from 7.8 to 8.1. Cholera vibrios, however, grow comparativel well in media with stronger alkalinity than other organisms. Th range of PH favourable to the growth of the vibrio in bouillon is 6.0 t 9.0, and in peptone water 5.5 to 9.0. For rapid growth in pepton water a H ion concentration of 7.8 to 8.1 is the best and it should no be over 8.5. For incubation of 18 to 24 hours, the peptone wate should have PH of 8.5 to 9.0 to prevent the growth of other organisms

The most favourable H ion concentration for the growth of th vibrio is also influenced by the kind of media employed. For instance the limits of growth in glucose peptone water are from 4.95 to 5.4 and in bouillon from 5.3 to 5.7, and in peptone water from 5.0 to 5.2 Thus the cholera vibrio grows in peptone water with a lower H ion concentration than in bouillon. The limit of growth of colon orga nisms is below 5.0. Thus the resistance of cholera vibrios to acid i weak. During the growth of cholera in a medium, acidity is increase at first and then alkalinity is increased up to about PH 9.0.

Kojima, in 1923, found that, in media containing cane sugar, th optimum growth of cholera is obtained in media having a H ion con centration of from 7.0 to 8.0; growth is somewhat hindered at PH 8. and prevented at PH 8.8. A PH of 6.4 similarly prevents the growth and a PH of 5.6 exercises a sterilising action. He recommended weak alkaline media for use in connection with bactericidal tests for choler in test-tubes.

Sakuma, in 1922, recommended the addition of 3 to 4 per cen of 10 % sodium carbonate to litmus neutral agar medium.

2. Peptones in Media.

Tsuzuki and Miyazaki, in 1903, found that the growth of cholera ibrios varies according to the variety of peptones employed. They ompared peptone Carl Rohde, peptone Gehe and peptone Witte and ound peptone Carl Rohde to be most favourable to the growth of holera. Teruuchi and Hida, since 1912, have prepared peptone vhich they have found to be better than Witte or Gehe peptones.

The method of preparation of Teruuchi and Hida's peptone is as ollows : Casein 100 gm. is dissolved in 1 litre of 0.8 % dehy-rated sodium carbonate, and 5 to 10 gm. of pancreatin and a small uantity of chloroform added. The mixture is incubated for three o five days, during which period it is stirred from time to time, and a ample is taken out every day for test by the tryptophan reaction. When the reaction reaches its maximum and the presence of tylosin is lemonstrated, the mixture is heated to 80° C. and filtered. The solution s neutralised with weak hydrochloric acid and evaporated to powder nder a low temperature. When 4 to 5 per cent of peptone thus pre-ared is used in media, the growth of cholera is very favourable. An alkalinity of 0.3 per cent of dehydrated sodium carbonate is the est, but 1.2 to 1.5 per cent alkalinity also ensures a fair growth. The eptone which is prepared by the hydrochloric-acid-pepsin-digestion nethod is rather sensitive to alkalinity and with 0.5 per cent dehydrated odium carbonate the cholera vibrio would hardly grow. The authors ecommended therefore the use of trypsin-digested peptone for cholera nedia of high alkalinity. Trypsin-digested peptone is extensively used n bacteriological work in Japan under the name of Teruuchi's peptone.

Kabeshima, in 1922, compared Teruuchi's peptone with others and ound that the growth of cholera in media with Teruuchi's peptone is ıot appreciably better than with other peptones, but the appearance f the indol reaction is more rapid and distinct. He maintained that he growth of cholera is not dependent on the kinds of peptone used ut on the reaction of the medium. Media of neutral reaction or vith an alkalinity up to 5 degrees with phenolphthalein yield the est growth. Cholera grows well in a strongly alkaline peptone water uch as 50 degrees with phenolphthalein, in which other ordinary bacteria lo not grow. Therefore such a medium should be used in tests with æces of convalescent patients and incubated for 18 hours. Where æces contain a large number of cholera vibrios, the peptone water hould be weakly alkaline or neutral and incubated only for 6 hours.

3. Serum or Blood Media.

Dieudonné's medium and Esch's medium have been studied in Japan. Tokunaga, in 1911, reported that Esch's medium does not ufficiently suppress the growth of organisms other than cholera. For

this purpose Dieudonné's medium is better. He also found that sodium hydroxide can be used instead of potassium and he prepared a sodium-hydroxide-serum agar medium. Experiences with this medium showed it to be an improvement on Dieudonné's, and, since this medium is transparent, the characteristics of cholera colonies can be observed. He also reported another medium as being far superior to Dieudonné's. Defibrinated blood is added in equal amount to 93 per cent alcohol, and then filtered through paper. The filtrate is compressed to remove as much water as possible and dried at 55° C. to powder form. Of this powder 15 parts, 15 parts of normal sodium hydroxide and 15 parts of water are mixed and sterilised for 30 minutes. Of this mixture 3 parts are then mixed with 7 parts of ordinary agar medium, and plates are made.

Kabeshima, in 1912, studied media containing hæmoglobin, and compared their efficiency with the media of Dieudonné, Pilon, Esch, Oshida, Ottolenghi and others. He prepared the following medium : To 80 c.c. of 3 % agar medium are added 10 c.c. of 25 % crystal sodium carbonate solution and boiled for 30 minutes; the mixture is then cooled to 60° C., when 3 gm. of Pfeiffer's hæmoglobin extract in 10 c.c. of salt solution are added. The mixture is poured into Petri dishes. The medium may be used immediately.

This plate is transparent and brownish and it has an aromatic odour. The growth of the cholera vibrio on this medium is excellent; the colonies become visible within 10 hours and in 18 hours they have diameters of from 2.5 to 3.5 mm. and in 48 hours they are as large as 6 mm. in diameter. On the other hand, coli, typhoid, paratyphoid, dysentery, pyocianeus, alkaligenes organisms show no visible growth in 24 hours, and at the end of 48 hours alkaligenes alone appears in the form of minute colonies. Cocci may grow within 24 hours, but they are easily differentiated by the characteristics of the colonies.

A comparison of Kabeshima's medium with other selective media shows that Dieudonné's medium cannot be used for 24 hours after its preparation, and when it is kept for a time its free alkaline is decreased, and consequently its suppressive action for the growth of other organisms is diminished. In Pilon's medium, sodium carbonateis substituted for the potassium in Dieudonné's medium. It has dark brownish particles, which interfere with the examination of the colonies, and there is a gradual decrease in the amount of free alkaline. Esch's and Ottolenghi's media have only a weak suppressive action for the growth of other bacteria. Ohshida's medium does not give a sufficiently good growth of cholera. On the other hand, Kabeshima's medium is easy to prepare and can be kept for a comparatively long time; it gives a very good growth of cholera vibrios, and at the same time it has marked suppressive action on other bacteria. For these reasons, it is suitable to use for the isolation of cholera vibrios when these are co-existent with a large number of other bacteria.

Kabeshima's medium can not only be used in laboratories

satisfactorily, but also gives good results in the examination of fæces of cholera patients. According to Kabeshima's report, results of the comparison of various media for the growth of cholera are as follows :

1. Ordinary agar medium (examination of fæces from 76 cholera patients) :

	Per cent
Positive growth of cholera	90.8
Negative growth of cholera	9.2
Growth of cholera vibrios only	14.5
Mixed growth of various organisms with cholera	76.3

2. Dieudonné's medium (examined with fæces from 68 cholera patients) :

	Per cent
Positive growth of cholera	100
Growth of cholera vibrios only	78.0
Mixed growth of various organisms with cholera	22.0

3. Kabeshima's medium (examined with fæces from 112 cholera patients) :

	Per cent
Positive growth of cholera	100.0
Growth of cholera vibrios only	93.7
Mixed growth of various organisms with cholera	6.3

Kabeshima's medium greatly facilitated the work of Takano in his study of the relationship of fish to cholera. Nakamoto also reported Kabeshima's medium to be the best of all the selective cholera media. Other work in Japan all confirmed Kabeshima's experiments with his medium.

Kabeshima, in 1916, prepared his medium with hæmoglobin extracts made in Japan in the following proportion : In 1 litre of neutral broth agar 3 per cent Teruuchi's or Shiono's peptone is dissolved; 100 c.c. of 8 % crystal sodium carbonate solution is then added. The mixture is boiled for 10 minutes and then cooled to 45° C., when 50 gm. of Shinoda's hæmoglobin extract dissolved in 100 c.c. of salt solution are added. The medium thus prepared is divided into Petri dishes in suitable amounts. The cholera grown on this medium can be used for diagnostic agglutination tests.

4. Media for colouring the Colonies.

Yoshida, in 1911, noticed that colonies of cholera on Endo medium gradually become deeply scarlet in three to four days. Taking advantage of this fact, he devised the following medium :

3 % ordinary agar medium	1,000	c.c.
10 % sodium carbonate.	30-40	c.c.
Saturated alcoholic solution of fuchsin . . .	4	c.c.
Pure glucose	30-40	gm.
10 % sodium sulphite solution	25	c.c.

The colonies of cholera and other vibrios are coloured scarlet on th medium, but other organisms in fæces are not coloured.

Ito (1914), taking advantage of the fact that the cholera vibr changes starch into sugar and then produces acid, while colon organisr do not have any such action, devised the following starch medium:

Water	1,000 c.c.
Starch	10 g.
Peptone	30 g.
Salt	5 g.
Agar	30 g.
Saturated alcoholic solution of fuchsin	5 c.c.
10 % sodium sulphite solution	25 c.c.
10 % crystal sodium carbonate solution	30 c.c.

On this medium the colonies of cholera become visible in 12 hou and are bright scarlet; in 20 hours the colonies have a diameter of abo 2 mm. and are surrounded with a clear zone. The colon bacilli do n thrive very well and the colonies are greyish white, without any cle zone around them. Differentiation between cholera and the other vibri on this medium is not possible. The cholera vibrio grown on th medium is the same as regards motility and agglutinability as that grow on ordinary agar medium. Cane sugar may be substituted for starch ar litmus for fuchsin.

Kodama (1921), having ascertained the fact that the cholera vibr produces a large amount of diastase ferment, attempted to prepa a medium in which the property might be turned to good accoun Other vibrios also produce the ferment, as do anthrax, colon, subtil bacilli in a small amount. On the other hand, typhoid, paratypho bacilli, dysentery B., staphylococci and yeasts do not produce diasta ferment. Therefore a culture of cholera in peptone water with starc may be readily tested with Lugol's solution for changes in the starc The following substances were contained in his medium :

1. Starch-litmus agar medium :

3 % neutral agar medium (Witte peptone)	100 c.c.
10 % sodium carbonate	2 c.c.
Starch	3 g.
A 60-fold dilution of litmus solution	15 c.c.

2. Starch-fuchsin agar medium :

3 % neutral agar medium	100 c.c.
10 % sodium carbonate	2 c.c.
Saturated alcoholic solution of fuchsin	0.1 c.c.
20 % sodium sulphite solution	2.5 c.c.
Starch	3 g.

3. Starch-fuchsin in serum agar medium :

The second medium	2 parts.
A 5-fold dilution of ox serum	1 part.

Culture experiments with these media showed that within 10 to 15 hours there appear two distinct types of colonies : one is large, with irregular margins and stained deep red (diameter : 0.3 to 0.7 cm.), and the other is small and round (diameter : 0.2 to 0.3 cm.), either stained entirely red or with red spots in centre on a white background. The third medium gave the best results.

According to Arai (1912), there are certain cocci which change Kodama's medium. A few of the staphylococcus group and some of the diplococcus group have such an action. Care must therefore be taken in the isolation of cholera from fæces.

The characteristic of Kodama's second medium is the substitution of starch for the lactose of Endo's medium. Oguchi and Tachibana recommend that it be made strongly alkaline for the isolation of cholera vibrios.

Yamada (1919) utilised bean juice as sold on the market. Agar 3 per cent is added to the bean juice and dissolved and strained through gauze; 1 per cent peptone and 0.5 per cent sodium chloride are then added. To 100 c.c. of the above mixture are added 0.5 c.c. of saturated alcoholic solution of fuchsin, 2.5 c.c. of 10 % sodium sulphite, 1 c.c. of sodium carbonate and theresulting solution is sterilised for 30 minutes on three consecutive days, after which plates are made. The colonies of cholera and the other vibrios are scarlet in colour, while the colonies of the colon bacillus are un-coloured.

Fuha made a new medium, taking advantage of the fact that cholera has a specific reaction for Wollschwarz-Gruber. Its preparation is as follows : Ordinary agar 2 per cent is dissolved and cooled to 60° C. (there is a risk of discoloration at high temperature); then 3 c.c. of 1 % Wollschwarz, and 5 c.c. of 5 % sodium carbonate are added and well mixed. Plates are then made. The medium is of a greenish colour and is transparent. The cholera vibrio grows well on this medium; by taking the stain from the medium, it forms specific colonies, which can be easily differentiated from the colonies of other intestinal organisms. At first the colonies are light rose-coloured, subsequently changing to deep purple. The colour of the medium around the colonies gradually fades. Colonies of organisms other than cholera are greyish white and small, and the colour of the medium around them is not changed. The growth of cholera on this medium is good and the organism has motility and agglutinability similar to that grown on ordinary agar media.

Nagami prepared a medium using brom-thymol blue. To litmus neutral ordinary agar medium is added 0.002 per cent of brom-thymol blue; it is then made alkaline with potassium hydroxide. Of potassium hydroxide 0.25 per cent is added when the Koch steriliser is used, and 0.3 per cent when the autoclave is employed . The above medium is made into plates for the culture of the cholera vibrio. The colonies of cholera have sharp margins and are coloured green. The colonies of the other vibrios have irregular margins and are yellowish in colour.

Koran (1922) prepared a special medium which takes advantage

of the albumin-splitting action of cholera. Teruuchi's peptone 3 gr salt 0.5 gm. and agar 3 gm. are dissolved in 1 litre. Then casein nutrose 0.5 gm. and 10 % sodium carbonate 2 c.c. are dissolved in 10 c. of water and sterilised and added to the first mixture. Finally, 0.1 c. of a saturated alcoholic solution of fuchsin is added. Cholera gro well on this medium in the form of light-red, round, elevated coloni with a clear zone around them. They can be easily differentiated fr colonies of other organisms. The agglutinability of the cholera vib grown on this medium is not changed.

There are a few other media to which reference may be made.

Inamatsu (1912) boiled 3,000 gm. of bean curd residue in 1 litre water, after which it was filtered. Of agar 20 gm. are next dissolved a 40 gm. of peptone and 5 gm. of salt are then added. The reaction made neutral and then 3 gm. of crystal sodium carbonate are adde the medium is placed in test-tubes. Cholera grows on this medium ju as well as on ordinary agar medium, and the growth of other organis is inhibited.

Toyoshima (1914) took advantage of the fact that cholera gro well in ox bile and substituted it for broth in preparing a strongly alk line agar medium. Cholera grows in large colonies greyish white colour, with a moist surface. Around the colonies are discoloured zon The growth of other organisms than the vibrio is inhibited.

Iitoyo prepared a medium with fish; almost any kind of fish may used. Of fresh fish 50 gm. are cut into small pieces and boiled in 1 lit of water, with 5 gm. of salt, for 1 hour, and then filtered. The filtra is divided into test-tubes and used like peptone water. The vibri grow very well within 6 to 7 hours. Other organisms are inhibite Since fresh fish is easily obtainable in Japan, this medium may be us economically instead of peptone water.

Thus numerous cholera media have been prepared by many inve tigators; in practice, each has its advantage and disadvantage. Marum in 1917, compared various media employed for the bacteriologic diagnosis of cholera. His conclusions in short were as follows :

If the media of Dieudonné, Pilon, Esch, Oshida, Inamatsu a Kabeshima be compared, it will be found that :

1. The most convenient for preparation, storage and use is Oshida after which come the media of Inamatsu, Kabeshima and Esch in t order named.

2. The medium which gives the best growth of cholera is Kabeshima medium and then Pilon and Dieudonné media.

3. The growth of other organisms is inhibited most effectively o Dieudonné's medium; then come the media of Pilon and Kabeshima

4. The most suitable medium for studies of morphology and immu nological reactions, taking organisms directly from the colonies, is tha of Esch, and then that of Kabeshima, Dieudonné and Pilon in the orde mentioned.

Finally, Marumo recommended Dieudonné's medium as the best ·lective medium for the growth of cholera. To make bacterial suspen- on from the colonies, peptone water should be used in the place of ılt solution.

Harata and Kagawa (1921) recommended the use of the selective :edia, such as Dieudonné's, in addition to peptone water when the ımber of cholera vibrios in the fæces of patients is very limited.

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Chapter II.

EXAMINATION OF THE CHOLERA VIBRIO.

1. Morphology.

Shibayama (1902) observed an altered form of the cholera vibr in old culture. He continued replanting a cholera culture on agar med at intervals of from several weeks to three or four months, and after few replantings he found markedly altered cholera organisms. Morph logically, they were slender, with a round unstained part, and som times there were distinct branchings. These altered forms are see in fresh culture and are not the so-called degenerative forms. The organisms do not reassume the form of normal cholera vibrios either b repeated cultures or by animal passages. They also show some decrea in virulence and become difficult of cultivation.

Ohno (1902) found that morphological changes of the cholera vibr were dependent on the reaction of the medium on which it was cultivate and the relation of the morphological changes and the reaction vari with different strains. According to his observation, the cholera vibr may assume a rod shape, a slender vibrio form with a diminished curv a thick comma-like form or cuboidal forms. A single strain may dev lop different forms on different media. As a whole, however, in ac media the vibrio assumes a more or less rod-like shape, and with an increas of the alkalinity it becomes cuboidal in form. Yet the degree of acidit or alkalinity necessary to produce such changes differs with differe strains. Thus, in order to have the typical comma form of cholera, th most suitable medium for that particular strain must be selected. an unsuitable medium be used, the cholera organism may be overlooke on account of its atypical form. But cholera has a property of becomin easily adapted to a medium and, if a strain be repeatedly transplante in the same kind of medium, the organism assumes the typical form cholera.

Yamada (1902) studied the morphological changes of the choler vibrio in cultures and in the fæces of cholera patients, and found marke differences. If the fæces of a cholera patient be examined directly und a microscope, various morphological forms will be seen. Thus the are large or small forms, thick or thin, with markedly different degree curves, and, besides the typical comma forms, there are red shapes wit slight curving or tubercle-bacillus-like forms, and kidney-like or cocco forms. In the beginning of cultivation on fresh medium, altered form are frequently seen. Consequently, it is difficult to make a diagnos by morphology alone.

Amako (1902) studied cholera strains during the epidemic of 1902, and reported that cholera vibrios are found almost in pure culture in the rice-water stool of serious cases, but the morphology is not constant. The forms noted could be divided into five groups. The organism of the first group is 1.5 to 2.5 microns long and 0.7 to 1 micron thick, and the middle is slightly thicker than the ends, which are obtuse, with the normal curving. Sometimes semi-ring forms or with very little curving may be seen. The organism of the second group has a rod shape with very slight curving. When this is cultivated, it assumes the typical vibrio form. The organism of the third group is kidney-shape or coccoid in form. When this is cultivated, the typical form is produced. The organism of the fourth group is very slender with only slight curving. The last form is a small and short vibrio. Cholera grown in peptone water has a typical cholera form. On other media, such as agar slant, gelatin, bouillon, milk, potato, yolk of egg, ascitich fluid, the changes in form are slight within the first 24 hours, but, when cultivation is continued for a longer time, altered forms are produced. The temperature of incubation has some influence on the atypical formation.

Repetition of cultivation, especially in liquid media, produces marked alteration of form. Chain forms and thread-like forms are often seen. There is one flagella and motility is very active, but the freshness of culture, the reaction of medium and the temperature of incubation have a marked influence.

Polar bodies are demonstrable in all cholera vibrios by staining. Shibayama mentioned such polar bodies in his report and also noted well-marked degeneration forms in old cultures. Minamizaki (1917) studied this question in detail. He stained the cholera vibrio by Neisser's method for one minute and washed with water and then stained with Bismarck brown for half a minute. Cholera vibrios have polar bodies similar to those of diphtheria. Examination of an 18- to 20- hour culture of 31 strains by Neisser's method showed that 7 strains did not show such polar bodies. Further studies of these 7 strains showed that 5 strains lost their polar bodies within one to two days of cultivation, and 2 strains lost theirs on the sixth day and the remaining strain (El Tor strain) lost it on the eighth day. The disappearance of the polar bodies is related to the kind of medium employed. They are kept longest in bouillon and gelatin and shortest in whey, milk and glycerin bouillon.

Kabeshima studied the motility of cholera vibrios during the epidemic of 1925.

2. Methods of Examination [1].

It was Professor Kitasato who, in 1885, isolated the cholera vibrio for the first time in Japan at the time of an epidemic in Nagasaki. Since then, bacteriological examinations have been made extensively. It

[1] For rules adopted by the State Institute for Infectious Diseases for the bacteriological diagnosis of cholera, see Appendix, page 111.

will be recalled that bacteriological technique was introduced into Jap by Professor Kitasato on his return to Japan, when the Institute f Infectious Diseases was established.

As regards the standard bacteriological methods of examinatio the instructions issued by the Government Institute for Infectio Diseases are produced elsewhere in this monograph. Several studi concerning these bacteriological methods have been carried out l Japanese investigators.

As early as 1898, Koba recognised the value of agglutination in t diagnosis of cholera. There are, however, other bacteria than chole which are agglutinated by a cholera immune serum. But those choler like organisms which react with a cholera immune serum react al with other immune serums, such as a diphtheria immune serum. A any rate, the cholera vibrio is agglutinated by cholera serum and t reaction is specific. He maintained that the amount of the serum us in Pfeiffer's test should not exceed 0.01 c.c.; when quantities in exce of 0.05 c.c. be used, the results become inaccurate.

Shibayama and Sumikawa, at the time of the epidemic of 190 collected 33 strains of cholera and studied their morphology, cultur characteristics, toxicity, agglutinin reaction and Pfeiffer's phenomeno They found marked morphological variations and differences of ch racteristics in the colonies on gelatin plates, attributable to t influence of temperature and difference of toxicity to guinea-pi amounting to one-half to one-tenth of the lethal dose. They al reported that, in agglutination reactions, the new strains reacted wi the serum of the stock strains, while the stock strains are not agglut nated by the serum of the new strains. But Pfeiffer's phenomen are mutually positive. Thus the authors have shown in their repo that the agglutinogen of cholera is not single.

Kanehara (1903) studied the preparation of the cholera immu serum for diagnostic purposes, and concluded that the agglutini reaction of the cholera vibrio is specific, and for diagnostic purpos immunised rabbit serum is the best. Occasionally a positive agglutini reaction of cholera-like vibrios with cholera immune serum makes th differentiation difficult. If, however, immune serums be prepared wi each organism, and cross tests made, specific relations are demonstrabl Vibrios are agglutinated by the normal serum of horses, oxen, shee dogs, rabbits, guinea-pigs and man, in this order of strength of reactio Thus the sera of sheep, oxen and horses give fairly strong agglutin reactions with the cholera-vibrio group of organisms. Again the abo animals were immunised and the agglutinin titres were compared. T production of agglutinins in the sera of man, guinea-pigs and rabbi was much more marked than in sheep and dogs. Therefore in the pr paration of diagnostic cholera serum, the rabbit is the best animal use. As to the method of immunisation, a cholera strain of stro virulency should be selected and intravenous injection is the be method. Injections should not be too frequent: if frequently repeat the agglutinin titre is increased, but at the same time the group reacti

or non-pathogenic vibrios is also increased, so that differentiation becomes difficult.

The present methods of rapid and accurate diagnosis of cholera vibrios were attained by constant improvements in media, in the selection of the immune serum, and in the technique of immune reactions. A few of the more important reports will be referred to here.

Tsujiya (1915) devised a method of testing the agglutinin reaction and bactericidal phenomena at one and the same time. The following materials were used : (1) Inactivated cholera immune serum; (2) fresh normal serum of rabbit or guinea-pig; (3) solution of bouillon (2 parts) and peptone water (8 parts); (4) suspension of the cholera vibrio. The foregoing materials are mixed as shown in the following table.

Test-tube Number	Cholera Serum 1.100	Fresh Serum	Bouillon Peptone	Suspension of Vibrio	Results (Positive)
1.	1 c.c.	0.1 c.c.	0.4 c.c.	1 c.c.	Clear
2.	0	0	1.5	1	Turbid
3.	1	0	0.5	1	Agglutinated
4.	0.	0.1	1.4	1	Turbid
5.	0.25	0	1.25	1	Agglutinated
6.	0.01	0	1.49	1	Agglutinated

The above test-tubes are placed in 37° C. for two hours and the results are read. When all the test-tubes are turbid, the result is negative; in other words, the organism is not a cholera vibrio. A cholera serum having an agglutinin titre of over 3,000 should be used.

Izawa (1917) repeated Tsujiya's test and testified to the accuracy of the method. If patient's fæces contain an almost pure culture of cholera, it can be used directly; even in peptone water cultures a diagnosis can be made in seven to eight hours. The test can also be made by collecting a few colonies from off an agar medium.

Toyoshima and Yamanouchi maintained that, since the organism which has been altered, as shown by agglutinin reaction and the complement-fixation test, by culture in a medium containing immune serum, still gives a positive Pfeiffer's phenomenon with the serum made with the original organism, the bactericidal test is the most accurate and dependable test for the diagnosis of the cholera vibrio.

Kabeshima, in his later studies, has demonstrated the existence of typical and atypical types of cholera vibrio. For example, the type of the organism prevalent during the epidemic of 1919 to 1920 corresponded with the atypical type found in the epidemic in Formosa. It is beyond doubt that there are variation types of cholera in natural epidemics of the disease. It is therefore of practical importance to determine whether or not agglutinin tests with immune serum, prepared with strains of cholera selected by different men at random, is sufficient for diagnosis. Kabeshima (1922), considering that typical as well as atypical types of cholera vibrio are capable of causing an epidemic, urges that, in the diagnosis of the cholera vibrio, the type should also be determined at the same time. Furthermore, in diagnosis, the serum

of both types or a serum prepared with both types should be used i agglutinin tests or for Pfeiffer's reaction.

There is an interesting historical episode concerning variations i cholera vibrios. During the epidemic of 1902, there arose a heate dispute over a strain of vibrio isolated from a suspected cholera patien named Takeuchi. The Institute for Infectious Diseases, then represente by Professor Kitasato, regarded the Takeuchi strain as true cholera whereas the Hygiene Department of the Imperial University, repre sented by Professor Ogata, controverted this assertion. The reason for the dispute were as follows : the Takeuchi vibrio is thick and shor and the ends are sharp; liquefaction of gelatin and serum media is ver marked; growth in liquid media is atypical; the indol reaction is weak milk is coagulated; it has little toxicity, and does not agglutinate o give Pfeiffer's reaction with serum prepared with stock strains of th cholera vibrio. On the other hand, workers in the Institute for Infectiou Diseases maintained that the immunological reactions were positive.

Ishiwara (1903) collected fourteen strains of the so-called choler vibrio from Kyushu, Bakan and Okayama and endeavoured to find mor concrete reasons for the allegation that the Takeuchi strain was no true cholera. He carried out a comparative study of the Takeuch strain, true cholera strains and other vibrios, and he reported that, sinc the strains of cholera he had collected from various places had the sam characteristics as those of the Takeuchi strain, they were not the tru Koch's cholera vibrio. Therefore he affirmed that the epidemic of 190 was not an epidemic of true cholera. He also maintained that, sinc normal horse serum frequently and normal rabbit serum occasionally agglutinate the vibrio, it is dangerous to make a diagnosis of cholera by agglutination reactions.

Futaki also studied the Takeuchi strain and found the morpholo gical and cultural characteristics to be the same as Ishiwara had reported its virulence soon after isolation was strong, but gradually decreased after repeated culture on agar medium. As to the immunologica reactions, the Takeuchi strain gave positive agglutination reactions an Pfeiffer's tests with the cholera immune horse serum prepared by th Institute, but with immune rabbit serum prepared with the stock strain of the Institute or of the University the results were negative. He concluded that the discrepancy of opinion on the immunological reaction was due to the difference of the serum used, horse serum being used by the Institute and rabbit serum by the University workers.

In accordance with the bacteriological knowledge of the time, th cultural characteristics were considered to be very important and varia tion of the organisms was not taken into consideration. Furthermore, the technique used in immunological tests was not accurate and the singleness of agglutinin was generally believed. It was natural, therefore, that difficulty should arise in the diagnosis of atypical strains of cholera.

The appearance of the Takeuchi strain suggested the existence of variation forms of the cholera vibrio in nature. Kabeshima's later studies on the variations of bacteria were suggested by this episode.

Takaki (1914) classified the stock strains of cholera in the Department of Hygiene of the Tokyo Imperial University into the University type and the Takeuchi type. It was correct to consider the Takeuchi strain as a true cholera vibrio and there were also reasons to consider it not to be the true comma bacillus of Koch.

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Chapter III.

TYPES AND VARIATIONS OF CHOLERA VIBRIOS.

It was Kitashima and Ramson (1898) who for the first time attempted to change the characteristics of cholera vibrios artificially. They cultivated the vibrio in ordinary bouillon containing 1 per cent of cholera immune horse serum and, after it had been subcultured twenty times, the organism was planted on ordinary agar medium. The organism grown on this medium had characteristics different from the original strain. It was only slowly agglutinated, and the agglutinability of the organism recovered from the abdominal cavity of a guinea-pig killed by an injection with the organism was marked, but not as much as that of the original strain. If this changed organism be injected into the abdominal cavity together with an immune serum, no agglutination takes place. Thus Kitashima demonstrated the possibility of producing an immune fast strain of cholera. In 1902, Shibayama noticed that a strain of cholera he collected agglutinated with the sera of the stock strains, but the serum which was prepared by the new strain did not agglutinate the stock strains. He also noticed that the colonies of this new strain on slant agar medium were of two kinds: (1) thick colonies, of which the organisms were thick and short; and (2) thin colonies, the vibrios of which were slender and long.

Fukushima (1913), in a study of cholera carriers, injected the cholera vibrio into the gall-bladder of a rabbit. The organism, which remained in the gall-bladder for 105 days, had undergone marked changes in biological characteristics. Thus :

1. The organism in peptone water grew at the bottom of the tube, the upper part of which was transparent.
2. Examination of a hanging-drop specimen showed the vibrios massed together and there was little, if any, movement.
3. The colonies on agar medium were hard and not easily suspended in salt solution homogeneously.
4. Liquefaction gelatin was slight.
5. A suspension of the organisms exhibited pseudo-agglutination.
6. The virulence was weak; 4 mgm. of the organism would not kill a guinea-pig of 200 gm.
7. The changed strain was agglutinated easily with a serum prepared with it, but sera prepared with other strains did not agglutinate the organism completely.

In extreme cases the changed organism became entirely different

from other strains immunologically, but there were many intermedia forms. This change takes place by progressive steps and the vibr in different stages of variation can be isolated from the rabbit's ga bladder.

Shimazu and Nishiki (1914) cultivated the cholera vibrio in bouill containing cholera immune serum and complement (fresh guinea-p serum). After more than twenty subcultures, a strongly immune fa strain of cholera is obtained. This new strain resists the action bacteriolysin both in the test-tube and in the animal body. Agglutin bility is decreased, but virulence for an experimental animal is n diminished. The form of the organism is slender and the colonies a small. Such resistance against the action of bacteriolysin may be pr duced by animal passage; it may be lost by repeated subcultivation.

Takano studied a strain of cholera vibrio obtained from Singapo in 1915. He found many abnormal forms in the strain. It had a te dency towards pseudo-agglutination, and its virulence was low. was agglutinated by the sera prepared with itself as well with the othe strains, but the serum prepared with this organism would not agglutina other strains. In these respects this strain was similar to that produce by Fukushima in the rabbit's gall-bladder. Takano also repeated th experiments of Kitashima with regard to cultivation in bouillon contai ing immune serum. He confirmed the observation that the chole vibrio is a very variable organism. It undergoes variation in the anim body as well as in the test-tube, and it is easily conceivable that in natu there must be similar variations of type.

Toyoshima (1918) cultivated a non-pathogenic vibrio in chole immune serum, in a filtrate of a cholera culture and in symbiosis wit cholera. The organism cultivated in this way acquired agglutinabilit with cholera immune serum. If such an organism is used for the prepa ration of immune serum, the serum agglutinates the true cholera vibri This explains the fact that there are non-pathogenic strains isolate from cholera patients which are agglutinated with cholera immune serum

The El Tor vibrio has been reported in Europe as being distinc from the ordinary cholera vibrio. Kabeshima (1913) obtained thi vibrio from the German Sanitary Bureau and compared it with othe cholera vibrios. He found that the El Tor vibrio could not be diffe rentiated from the typical cholera vibrio by immunological reactions The virulence of the El Tor vibrio can be increased by animal passages and he was able to kill a guinea-pig of 200 gm. with 1/1,000,000 mgm. o a culture of this vibrio. The El Tor strain has marked hæmolytic action but among the ordinary cholera strains there are some which have marked hæmolytic actions. Watanabe found no difference in the hæmo lysins of the El Tor and true cholera strains.

Ohta found that, if cholera immune guinea-pig serum of low titre be used, cholera vibrios can be divided into two types; this differentiation is difficult when immune serum of high titre is used. He explained this by the fact that cholera has a common antigen and a non-common antigen. In the preparation of an immune serum of high titre, the common

ntigen is more active than the other and consequently the cholera annot be divided into types. This common antigen can be isolated y washing cholera with distilled water. The common antigen is not ost by animal passages or by cultivation on special media. Such acts indicate the presence of a principal and accessory antigen in the holera vibrio.

Matsuzaki (1921) repeatedly cultivated a non-pathogenic vibrio in ouillon with cholera immune serum. Agglutinability of the vibrio as at first reduced, but was increased later, and spontaneous agglutiation was very marked. The vibrio cultivated in bouillon with normal erum also exhibited marked spontaneous agglutination. Thus changes n the agglutinability of vibrios are easily produced.

Tawara (1925) found that, in the isolation of cholera from cholera atients, two types of colonies — thick and thin— could be observed from ne beginning. The organisms of both types of colony are typical of holera, biologically as well as immunologically. During a period of two nd a-half years his strains were subcultured over thirty times, and reained the same characteristics. The vibrios of the thick colonies were narkedly more motile than the others. Shibayama had previously oted two types of colonies of the cholera vibrio.

Kabeshima obtained in 1922 a very interesting strain of cholera ibrio from Shanghai. After the third subculture, he found five colonies, our of which did not agglutinate with cholera immune serum, while ne remaining colony agglutinated well. This last colony was composed f typical cholera vibrios, whose virulence was considerable. When the ther non-agglutinable vibrios were subcultured, both agglutinable and on-agglutinable forms appeared. The agglutinable vibrio was typical holera. Once more the non-agglutinable vibrio was subcultured and milar results were obtained; the process could be continued indefiitely. The non-agglutinable vibrio was not virulent for laboratory nimals : in fact, it was entirely unlike true cholera, but if it be used or the production of immune serum in rabbits, cholera immune serum obtained, and guinea-pigs immunised with this organism would be rotected against cholera. Such a strain is evidently a variation type f cholera.

Nobechi examined 88 stock cultures of cholera and found two nonotile strains. The organisms of these two strains have no motility nd no flagella, but in all other respects they are typical cholera vibrios norphologically, culturally, biologically and immunologically. They ere readily agglutinated with cholera immune serum, and their virunce was similar to that of the ordinary cholera vibrio. The immobility f the organisms could not be in any way influenced by repeated cultures r animal passages. It was certainly a new type, which was named licrospira Comma Schroter, var. immobilis Nobechi (1923), or Vibrio holeræ Buchner, var. immobilis Nobechi (1923).

Kabeshima (1913) recognised the existence of atypical forms of holera. In 1912, he collected 195 new strains, which had been isolated om cholera patients in Formosa and Japan, and 19 laboratory strains

from institutes in Europe. He made extensive studies with these strain and discovered several new facts. Thus :

1. Cholera vibrios can be classified into two types according to the agglutination reactions, namely, typical and atypical types.

2. The typical type is agglutinated highly with homologous serum but only weakly with serum of the atypical type, and the atypical type is agglutinated with homologous serum, but only weakly with the serum of the typical type.

3. The strain of the cholera epidemic in Japan in 1912 belonged to the typical type and that of the cholera epidemic in Formosa in the same year was the atypical type.

4. When an immune serum prepared by the typical type (Japan) is absorbed by the organisms of the typical type, the agglutinins are entirely lost, but when it is absorbed by the atypical type (Formosa) only the agglutinins for the atypical type are lost. Similarly, when the serum prepared by the atypical type is absorbed by the atypical type, the entire agglutinins are lost, but with the typical type only the agglutinins for the typical type are absorbed.

5. Thus, cholera vibrios have at least two distinct agglutinogens. The principal agglutinogen is responsible for the homologous agglutinin reaction and the accessory agglutinogen for the heterologous agglutinin reaction.

6. The complement fixation and bacteriocidal action in test-tube have similar relations as the agglutinin reactions.

7. In the test for resistance against infection, a guinea-pig immunised with the typical type is protected from a lethal dose of all cholera vibrios. A guinea-pig immunised with the atypical type is only protected from a lethal dose of the atypical type but not of the typical type.

8. When the El Tor IV (this strain corresponds to the typical type) is cultivated in bouillon containing homologous serum, its characters are changed and after ten subcultivations, it resembles the atypical type.

9. Similarly, when the atypical type was repeatedly subcultured in bouillon containing homologous serum, its character was changed and it resembled the typical type.

10. When the cholera vibrio is cultivated in bouillon containing homologous serum, the organisms becomes inagglutinable, but it acquires a spontaneous agglutinability. This is due to the loss of specific receptors, and at the same time new receptors which are common to many strains are formed.

11. If cholera vibrios are cultivated in bouillon containing heterologous serum, the organisms become inagglutinable to that serum, but agglutinability to the homologous serum is kept in many cases.

12. If the atypical type is injected into the rabbit's gall-bladder, the organism is changed to the typical type; and in the same way, if the typical type is kept in the rabbit's gall-bladder, it develops the characteristics of the atypical type.

Based on these facts, Kabeshima denied the single-strain theory,

which had been held by European investigators. Since then, Japanese investigators have accepted the view of Kabeshima, and the existence of variation forms has been taken into consideration in immunological diagnosis.

Nakadake (1920) confirmed the reduction of agglutinability of cholera vibrios when cultivated in bouillon containing homologous serum. He noticed that a serum prepared by his new strain obtained in Eiko, Manchuria, did not agglutinate the laboratory strains. Agglutinins in this serum were almost entirely absorbed by heterologous cholera strains. The guinea-pigs immunised with his strain were protected from infection by the strain, but the resistance of the animals for the laboratory strains was rather weak. Guinea-pigs immunised with the laboratory strains were protected from infection by the homologous as well as heterologous strains. There were also quantitative differences in complement fixations between the new and old strains. He concluded that, since there are marked differences in agglutinability and in antigenic action of cholera vibrios, suitable antigens must be used in the preparation of diagnostic immune serum and such antigens should contain representative strains.

Yamanouchi (1921) found a vibrio, isolated from a cholera patient, which was virulent to guinea-pigs but was not agglutinated by cholera immune serum. In order to explain these facts, he made various experiments. When the cholera vibrio is cultivated in bouillon containing cholera immune serum, its agglutinability is lost. An immune serum is prepared with this changed organism, and, when the changedorganism is cultivated in this serum, the organism regains its original characters. If the cholera vibrio be left in the intestinal canal of a cholera-immune animal, its agglutinability is changed by the action of immune bodies in the animal. Consequently, if cholera organisms be kept in the bodies of convalescent cholera patients, or in those of patients who have received preventive inoculations, the agglutinability of such organisms might be altered and they might not be agglutinated by an ordinary diagnostic cholera immune serum. In such cases, a negative agglutination reaction with a suspected vibrio does not necessarily indicate the absence of the cholera vibrio. Therefore, Pfeiffer's test, together with other tests, should be carried out in such cases.

Oda (1921) studied strains of cholera isolated during the epidemic of 1919 to 1920, and concluded that immunologically cholera should be divided into two types. He confirmed Kabeshima's work concerning the classification of the cholera vibrio. Oda's new strains belonged to Kabeshima's atypical type, and its immune serum agglutinated the homologous organisms but not other strains. The serum prepared by the typical type agglutinated all the strains in about the same degree.

The cholera vibrio has thus complex immunological properties, and, in the preparation of therapeutic and diagnostic serums, bothtypes of organisms should be used as antigen.

Kabeshima maintained that the cholera epidemic of 1921 was caused by the typical type. Y. Watanabe, Kawai and H. Watanabe also

noticed that the strains of cholera of the 1921 epidemic were somewh different as regards agglutinin reactions from the strains of the previo epidemic; and they accepted Kabeshima's theory of the existence of co mon and non-common receptors, and they classified their strains in three types. They were also able to distinguish thermolabile and therm stable receptors. These differences are clearly seen in different strai of cholera. Thus Kabeshima's two-type theory has been complicated b their findings. But all these findings indicate that polyvalent seru prepared with representative strains should be used for the diagnosis cholera, and that monovalent serum is dangerous for diagnosis in an ep demic. But even with a changed vibrio, accurate diagnosis can be ma when Pfeiffer's test is used.

Shiiba and Ushijima were able to differentiate strains obtained Chosen, Kanagawa and Moji from the strain taken in Nagasaki. Nobec collected strains of cholera during the epidemic of 1921 to 1922, an found an intermediate form in addition to the typical and atypical typ of Kabeshima. The characteristics of the intermediate form are th the agglutinin reaction, Neisser-Wechsberg reaction, Pfeiffer's phen menon and resistance test are between those of the typical and atypic types. For instance, the organism of the intermediate type is agglut nated equally well with the sera of typical and atypical types. At th same time, the serum of the intermediate type agglutinates both typic and atypical organisms equally well. The intermediate type is not mixture of the other two types. It is a fixed type, and cultivation it for a long time does not alter its characteristics. According to hi the epidemic in Japan in the early summer of 1921 was caused by th typical type, and that of autumn was caused by the atypical type, whi strains obtained from Shanghai in the epidemic of the same year we found to be of the intermediate form. The epidemic of 1922 was cause by the intermediate type according to a study of strains collected fro various places at different seasons.

Inouye and Kakihara (1926) made a comparison of 40 strains cholera collected during the recent epidemic with various types cholera, and they found that the new strains all belonged to a varie atypical type. They prepared immune serum with the new strains of 192 and agglutinin absorption tests were made. When 1925 strains an other atypical types were used for absorption all agglutinins were absorbe But if the intermediate type was used, the agglutinins for the typic and the intermediate types were absorbed, but agglutinins for th atypical type remained. If the typical type was used for absorptio all the agglutinins for the typical type were absorbed and the agglutinin for the atypical type remained almost intact, while a little of those fo the intermediate type remained. Similar results were obtained i experiments with the sera of the typical and intermediate types. Th agglutinogens of these various types consist of species-specific agglut nogens and type-specific agglutinogens. The former is common to a cholera strains, and is thermostable, while the latter is specific for eac type and is thermolabile.

These experiments confirm the theory hitherto held in Japan of a omplex receptor of cholera. It is important to classify cholera vibrios y immunological reactions not only for the scientific interest but also or practical purposes. Kabeshima divided cholera vibrios into two ypes, Watanabe and others into three types, Nobechi also into three ypes, Inouye and Kakihara into three types. Kabeshima called his ypes typical and atypical, Nobechi added the intermediate type, while nouye and Kakihara called them the first, second and third types. ince cholera is an organism which undergoes biological variations very asily, it is conceivable that various mutation forms exist in nature. It ıay be that further research will demonstrate the existence of still ırther types or varieties, but the above classification is likely to be ound sufficient for practical purposes.

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Chapter IV.

CHOLERA-LIKE VIBRIOS.

At the time of the cholera epidemic in Tokio in 1902, a patient, by na Takeuchi, was admitted into the Komagome Isolation Hospital as a c of cholera and died on the following day. The comma bacillus isola from this patient was reported by Ogata and Ishiwara not to be a typi cholera vibrio. This report caused heated discussions among the sci tists. Shibayama was foremost in insisting that the Takeuchi strain v a true cholera vibrio. Only the gist of the pros and cons of the cont versy can be mentioned here; it is of interest to the study of the hist of the progress of the bacteriological diagnosis of cholera in Japan. T opponents of the thesis that the Takeuchi strain was cholera said that :

1. Morphologically, it is too thick and large and the ends are t sharp.

2. The growth characteristics of the organism on gelatin plate a not like those of true cholera. The colonies on agar plate also differ.

3. Liquefaction of serum medium is extremely rapid.

4. The form of liquefaction of gelatin is also different.

5. The relation of growth to temperature is also different.

6. The chemical changes in liquid medium planted with this organi are different from those caused by true cholera.

7. The toxic action of the organism to animals is slight.

8. Pfeiffer's phenomenon and agglutination tests made with cholera serum are all negative.

At that time, chief stress was laid on morphological and cultu characteristics for the purpose of differentiation and many points w debated which, with present knowledge, would not give rise to a divergent opinions.

In 1898, during a cholera epidemic, Koba isolated four strains comma vibrios from a suspected cholera patient. The first vibrio w identical with the true cholera vibrio in morphology, cultural char teristics, immunological reactions and animal tests. The second vib was agglutinated with a cholera immune serum, but other reactio were not specific. The third vibrio was larger than the cholera vib and had one to three flagella on one or both ends. The cultural char teristics on gelatin and the morphology of the fourth vibrio were son what atypical.

Asakawa and Matsuda, in 1900, isolated from the fæces of a norm person an organism which closely resembled a cholera vibrio, but it

ot react with cholera immune serum. It had some infectivity for arrows and pigeons. It was, however, different from Metchnikoff's brio in immunological reactions.

Imamura, in 1902, described a vibrio, isolated from the fæces of a althy person, which morphologically closely resembled the cholera brio. It possessed infectivity for animals, but gave no cholera red action and liquefaction of gelatin was very rapid.

Matsuo, in 1908, described a vibrio isolated from sea-water in Kobe. resembles the cholera vibrio morphologically and is often met with sea-water. It has no toxicity for guinea-pigs, but one-fifth platinum opful of the organism kills mice. It can be differentiated from olera by immunological reactions.

Sukegawa, in 1912, isolated over 80 strains of non-cholera vibrios, hich were encountered while examining the fæces of 8,000 seamen uring an epidemic. He studied the characteristics of these vibrios id found their cultural and immunological characteristics to be so irre-ular that they could not be classified in any way. All were different om cholera with regard to immunological reactions. One strain of s many vibrios, however, agglutinated with a serum obtained by im-unising an animal with a certain cholera strain which had been kept r experiments. This strain, however, did not agglutinate with any her cholera immune serum. It gave Pfeiffer's phenomenon with true olera immune serum. Therefore this strain must have been a varia-on of the cholera vibrio.

Amaya, in 1920, argued that, since there are certain differences in e strength of agglutinin reactions in cholera immune serum and cer-in strains of the vibrio, and since non-pathogenic vibrios may be aggglu-inated by cholera immune serum, therefore, in carrying out agglutinin actions, horse serum must be avoided, for it gives a strong reaction, id rabbit serum should be used instead. When the group reaction is rong, the absorption of agglutinins or reduction of the agglutinability the vibrio by heating the organism should be resorted to. Still, ese methods are not absolute. Therefore animal tests in some cases ust be carried out.

Eguchi, in 1921, isolated from the fæces of a suspected cholera atient a strain of bacillus belonging to the colon group. This organism as strongly agglutinated with the cholera immune serum and the serum this patient during convalescence. Moreover, its toxicity for animals was considerable. Since this organism was excreted in relation ith certain well-defined symptoms, he maintained that this organism as the ætiological factor of the cholera-like disease from which the atient suffered.

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Chapter V.

AGGLUTINATION REACTIONS.

The theoretical study of agglutination reactions early aroused the nterest of immunologists in Japan. Saito (1903) studied the aggluti- ıation reactions of cholera in various conditions and he found that ıgglutinability of the organism is most marked with a one-day culture, ıfter which it is gradually lost. After four to five weeks of cultivation, ıowever, it becomes more easily agglutinable. The most favourable per- :entage of salt in the solution for the test is 0.6 concentrations over 1 per :ent are unsuitable. If the solution does not contain salt, the organism s not agglutinated. When the salt content of a medium is over 5 per :ent, growth is inhibited, but below that percentage the growth is ıninfluenced. The cholera vibrio grows in a salt-free medium, but the ıgglutination reaction of such organisms is sluggish. The cholera vibrio grown on a medium containing 0.2 to 0.5 per cent of salt is most aggluinable. To obtain distinct reaction, the suspension of organism nust be as thin as possible. The temperature of culture has very little nfluence on agglutination. There is hardly any difference in aggluti- ıation of organisms grown at 42° C. and at 15° C. respectively. The :eaction takes place equally well at all temperatures between 35° C. ınd 60° C. The reaction is slow below 35° C. The agglutinin is more .hermostable than the agglutinable substances. Water vibrios exhibit ı group reaction with the cholera immune serum and sometimes the :eaction is higher than when a homologous serum is used, but there is a listinct specific relation between the agglutinin and the agglutinable ;ubstance. Such specificity can be demonstrated by absorption experiments. Saito denied that chrysoidin specifically agglutinates the cholera ;ibrio.

It has been generally considered that the agglutinogen of cholera s single and that agglutinability is not changed by subjection to tem- ɔeratures between 160° and 170° C. Investigators in Japan have demon- .trated the existence of many variations and of thermostable and thermoabile constituents in the agglutinogen. Watanabe (1921) experimented with 20 strains of cholera and found that the agglutinability was de- :reased by heating the organism at 72° C. for one hour and in the majority of cases was lost by an exposure to 80° C. for one hour. If the ɔrganism be heated for one hour, some strains regain their agglutinability; ɔthers do not, but the agglutinin reaction of those strains which regain it s not so strong as before the heating and the clumps are small. The :xplanation of these phenomena is that the cholera organism has

thermostable and thermolabile receptors and that an immune seru contains agglutinin for each receptor. This is true for all types of chole strains, but the proportion of these receptors one to the other varies wi different types of the vibrio.

It has frequently been shown that the agglutinability of the chole vibrio cultured on a medium containing cholera immune serum is din nished. Yamaguchi (1921), after having ascertained that the agglu nability of the organism, cultured on a medium containing an immu serum, remains comparatively stable, prepared an immune serum wi such a strain. Then the organism was repeatedly cultured on a mediu containing the serum thus prepared. The agglutinability of the org nism with the homologous serum was greatly decreased and final entirely lost, but its agglutinability with the serum of the original stra was somewhat strengthened. It thus appears that the agglutinabili of cholera is very easily altered. Furthermore, the fact that son cholera organisms which have passed through an animal's intestines do n agglutinate with serum prepared with typical cholera vibrios shows t insufficiency of the agglutination test alone in determining the natu of the organism. In such cases Pfeiffer's test should be carried out.

Miyake cultivated cholera repeatedly on a medium containing carbol acid, and found that the agglutinability of the organism was decrease After five subcultivations this decrease was first noted and it reached i maximum after 39 subcultures. This altered organism had lost i flagella and was consequently non-motile and had become rod-shape The immune serum prepared with the carbolised strain agglutinate the homologous organism but the ordinary strains only slightly. Whe an immune serum prepared with the normal cholera vibrio is absorbe with the carbolised cholera strains the agglutinin for that organism completely absorbed, but not that for ordinary cholera. These fac seem to indicate that cholera possesses two agglutinogens, one in the boc of the organism and the other in the cell membrane and in the flagell The latter is absent in the carbolised cholera strain.

Inouye (1921) demonstrated the existence of two agglutinogens i another manner. According to him, cholera which has been cultivate at 37° C. contains agglutinogens A and B, and agglutinins A and B a formed by the immunisation of an animal. If, however, cholera b cultivated at 45° C. it has no agglutinogen A, and consequently n agglutinin A is developed in the process of immunisation.

Changes in the agglutinability of cholera that can be produced artifi cially may take place in nature as well. Friedberger and others onc maintained that since 6-hour to 8-hour cultures of cholera newly isolate from patients may exhibit spontaneous agglutination in physiological sa solution, Pfeiffer's test should be carried out in such cases for purpose of identification.

Kabeshima (1913) studied 6-hour to 8-hour cultures of 83 newl isolated strains of cholera, but never once encountered spontaneou agglutination. Shibayama's experience at the Bacteriological Labo ratory of the Metropolitan Police Station was similar : there wa

o spontaneous agglutination among over 300 newly isolated strains. pontaneous agglutination does occur but it is very rare, and the agglu- nation reaction is very important because a rapid diagnosis of cholera essential. But many studies in Japan have shown that the agglu- nation of cholera is very variable. Those strains which have been re- eatedly cultured or grown in media containing immune serum may show arked agglutination in salt solution during the process of making a spension. When dealing with such a strain the percentage of salt in the olution should be from 0.1 to 0.2 or formalin may be added to the spension, or the organism grown on a suitable medium, such as Kabeshima's medium, may be used. Those strains which exhibit spon- aneous agglutination as a result of repeated culture may possess a normal ower of combining with agglutinins, but those which have acquired this roperty by growth on media containing immune serum media have o power to combine with agglutinins.

Fukushima (1914) found that the cholera vibrio acquired the property f spontaneous agglutination after it had been some time in a rabbit's gall- ladder. He further studied the relationship of pseudo-agglutination ith media, time of cultivation, concentration of salt and heating. A seudo-agglutination in the beginning is not difficult to differentiate from ue agglutination, but when complete it is difficult. Pseudo-aggluti- nability is influenced but not determined by the media employed. It oes not disappear after repeated cultivation. It does not take place t low concentrations of saline. The property is destroyed by heating : 80° C. for 5 minutes; heating at 100° C. for over 4 hours does not bring ack the reaction. Ordinary agglutinability, though lost or weakened y heating at 75° to 100° C. for 5 minutes, is regained by heating at 100° C. r 30 minutes. When an immune agglutination test is made with an rganism which exhibits pseudo-agglutination, the concentration of lt should be low, and, if the pseudo-agglutinability be destroyed by eating for a long time, an immune serum prepared with heated cholera brio should be used.

There are some organisms other than cholera which are agglutinated y cholera immune serum.

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Chapter VI.

CHOLERA VACCINES.

1. (a). Methods of Vaccination.

Japan has been frequently invaded by cholera, with the result that preventive measures have been studied attentively. At the time of the epidemic of 1896, Tamura, of the Kitasato Institute, began to study cholera vaccine. A suspension of organisms killed by heat was injected into animals and his own body. During the epidemic of 1902 in Kobe, prophylactic inoculation of cholera vaccine was carried out on a large scale. Out of a population of 1,778,320 in the Hyogo prefecture, 77,907 were inoculated. The vaccine was prepared according to Colle's method and 1 c.c. of it was the dose for one injection. The reactions were very mild. The highest fever was 38° C. and chills or shiverings were rarely observed; some local tenderness developed five to six hours after the injection but neither swelling nor redness was marked and they disappeared in three days. Very occasionally there were urticarial eruptions. Polyuria was noted, and slight diarrhœa on the day following inoculation occurred in 10 per cent of the persons vaccinated. Nausea and vomiting were very rare.

Of 1,183 cholera cases among those uninoculated, 882 died, a case mortality rate of 74.5 per cent. Of the 43 patients among those who had been inoculated, 17 died, a mortality rate of 39.5 per cent. The immunity conferred was not absolute, but the rate of infection and the case mortality rate were both greatly decreased. Better results might have been obtained by an increase in the dose of the vaccine.

Since then, cholera vaccines have been used at each epidemic. The vaccine is still prepared by Colle's method. The cholera vibrio, grown on an agar medium, is suspended in physiological salt solution and heated at 60° C. for 30 minutes, and diluted so that 1 c.c. contains 2 mgm. of the organism. Two injections of 1 c.c. and 2 c.c. are given at an interval of seven days. The vaccine contains 0.5 per cent of carbolic acid.

In 1916, Takano suggested that a sensitised vaccine might give better results. This has since been supplied by the Kitasato Institute. Sensitised vaccines prepared with the living organism were first used for the prevention of typhoid fever. Practical difficulties necessitated the abandonment of the use of the living organism. A comparison of the results obtained by vaccines of sensitised dead organisms and heated organisms respectively showed that the former produced less reaction

but the production of antibodies was greater. Since then, this form vaccine has been more generally used. Experiences with sensitis typhoid vaccine suggested a sensitised cholera vaccine. The advanta of sensitised cholera vaccine is that it produces less reaction; cons quently a larger dose can be injected if necessary, and the interv between the two injections can be made shorter.

The method of preparation of sensitised cholera vaccine as describ by Takano (1916) is as follows : a 20-hours agar culture 1 gm. is suspend in 2 c.c. of a cholera immune horse serum (bactericidal titre of at lea 0.0001 c.c.) diluted four times with the salt solution; the mixture is th incubated for 2 hours, during which it is shaken from time to time. Th the suspension is centrifuged at very high speed and the organism washed twice with salt solution. The organism thus sensitised is su pended in physiological salt solution containing 0.5 per cent of carbol acid. Of such a suspension 1 c.c. contains 2 mgm. of the organism. Th cholera vaccine thus prepared is placed in an incubator overnight. Ch lera organisms are killed by 0.5 % carbolic acid if placed in an incubat at 37° C., but culture tests are carefully made to verify the death of th organism and the absence of other contaminating bacteria. An essenti part of this process is to prevent the death of the cholera vibrio until th sensitisation is complete. If dead cholera vibrios were to be used, th antigen would be largely set free in the medium and lost in the proce of washing, so that the antigenic power of the vaccine would be great reduced.

Takano determined the nitrogen content of vaccines prepared i various ways. The results were as follows :

Vaccines.	Amount used.	Nitrogen Content
Heated vaccine	100 c.c.	5.18 mgm.
Precipitates of heated organism (centrifuged)	100 c.c.	3.50 mgm.
Precipitates of living suspension (centrifuged)	100 c.c.	4.48 mgm.
Sensitised vaccine	100 c.c.	4.76 mgm.
Sensitised vaccine (sensitised 24 hours)	100 c.c.	4.06 mgm.
Sensitised vaccine (sensitised after being killed by carbolic acid)	100 c.c.	3.64 mgm.

The following reasons are given by Takano and Yabe for recom mending the use of sensitised vaccine :

1. Suspensions of cholera killed by the addition of carbolic acid afte sensitisation and cholera suspensions in carbolised salt solution adde after the organism has been heated have about equal powers of producin bacteriolysin. The production of agglutinins is higher with the heate vaccine, but there is no difference in the resistance to infection produce by the two vaccines.

2. In the process of washing, some of the elements of the organis may be lost, but the amount of antigen so lost is very little. The ant genic power of the organisms in heated and sensitised vaccines respec tively is about the same.

3. Sensitised vaccine has the following practical advantages : th local and general reactions are milder · consequently, the dose may b

ıcreased, and, since the absorption is rapid, the interval between the ıjection may be shortened, with the result that the production of a high ‹egree of immunity can be rapidly obtained.

This sensitised vaccine, which has been in use since 1916, has been nore readily accepted by the general public and, in spite of heated dis-ussion as to its relative effectiveness, even the opponents of its use nust admit that it has done much to popularise prophylactic inocula-ions. Controversies concerning the effectiveness of different vaccines which are discussed elsewhere) led to the study of certain immunolo-;ical aspects of cholera, which has thrown much light upon the subject. Koyama and Yanagisawa (1922) reported that, if the sensitised vaccine ›e kept in a suitable place, it keeps its antigenic power for thirteen months vithout any alteration. A two-year-old vaccine is still capable of confer-ing resistance against infection, but this property may be lost after hree years of storage. After three years of storage, the production of gglutinin was reduced to a-half : the production of bacteriolysins was educed after two years of storage. Sensitised vaccines can certainly be tored for more than one year without any appreciable deterioration.

A new method of preparation of sensitised vaccine was proposed by Miura in 1919, but has not been generally adopted. Miura's method is .s follows : After the sensitised organism has been washed, it is placed n a Glocken exsiccator with chlorcalcium and kept *in vacuo* for 48 hours. The resultant dry powder is kept in ampoule until required for use. The ntigenic power of such a dried vaccine is retained for a long time without leterioration.

After the use of sentitised vaccine had been proposed, Ichikawa (1916) .rged the superiority of a carbolised vaccine. He maintained that, in rder to popularise the prophylactic inoculation of cholera vaccine, the nost important consideration is to minimise the reaction. His vaccine ›as prepared with this object and sold as a cholera vaccine without eaction. The preparation is very simple. The living cholera is sus-›ended in 0.5 % carbolised physiological salt solution, and 2 to .5 mgm. of the organism is injected in two or three divided doses. He hus vaccinated 500 employees of the Osaka Momoyama Hospital during n epidemic. There was no case of cholera among those who were noculated, but there were two cases among the few who had not been noculated. This was very striking and could not be regarded as a coinci-ence. There are reasons to believe that the carbolised vaccine possesses nost antigenic power.

Although Ichikawa maintained that carbolised vaccine produces the ›ast reaction, later studies by many other observers have shown just he contrary to be the case.

Kawaai (1922) made animal experiments with a hydrochloric acid ›accine, but it has not been used in practice. The organism was killed vith hydrochloric acid and the suspension was neutralised with sodium ıydroxide. It was said that antibody production was about the same ıs with the heated vaccine.

Torigata stated that his so-called Impedin phenomenon is also

characteristic of the cholera vibrio. Uyeda (1922), studying under Tor gata's direction, maintained the best cholera vaccine to be their so-calle Koctoantigen. It is prepared by boiling cholera 15 to 30 minutes t destroy the Impedin. The supernatant fluid,af ter centrifuging, is usec Filtration through a porcelain filter results in a loss of antigen by absorp tion. This vaccine has not yet been used on any considerable scale.

1. (b). Comparison of Various Vaccines.

The relative prophylactic value of cholera vaccines prepared by di ferent methods has been discussed by many investigators, and for time this subject became the centre of interest among bacteriologist in Japan. Brief summaries of the reports will be made in the chronc logical order of their appearance.

Yabe (1916) found that, in the preparation of the sensitised vaccin the amount of the immune serum used was of importance, and, in judg ing the effectiveness of the vaccine, careful consideration should b given to the amount of vaccine injected in proportion to the body weigh of the animal; he stated that the formation of immunity must be teste by the degree of resistance against the infection by the injection of livin organisms. Moreover, the amount of specific bactericidal substanc in the serum of animals which received the injection of the vaccin should be measured. He experimented with 82 guinea-pigs and wit strains of different degrees of virulence. For the infection tests, he use two to eight times the minimum lethal doses, and the amount of th organisms in the dose of vaccine used was between 1 and 4 mgm. Th results of his experiments indicated that, immunologically, there wa no difference between the heated and sensitised vaccines. After th inoculation of animals with these two varieties of vaccine, the produc tion of bacteriolysin on the third, fifth and seventh days was measured in this respect also he found no difference between the two vaccines excep that the body weight of the animal was markedly reduced after an injectio of heated vaccine. The conclusion reached was that sensitised vaccin can be injected in larger quantities and at shorter intervals, as the reactio is very mild and the process of sensitisation destroys none of the antigeni power.

Yabe vaccinated a number of students in the Higher Normal Schoo with the sensitised vaccine and observed the reactions. Of 400 student thus vaccinated, none exhibited a rise of temperature over 37° C. A a control, 100 students were inoculated with heated vaccine. Of thi number, the temperature of 20 students rose above 37° C. and of 5 abov 38.5° C. Thus by a human experiment, the advantages of a sensitise vaccine were demonstraten.

Matsui (1916) maintained that, as the local and general reaction following the injection of sensitised vaccine are very mild, vaccinatio would not interfere with the normal occupation of persons vaccinated and a larger quantity could be injected at one dose. The injection of 3 mgm

the vaccine produces antibody formation within 72 hours, and conse ıently the negative phase would also be shortened.

Tsugane (1916) inoculated 412 students in the Okura Commercial :hool. A certain amount of pain, swelling and redness followed the jection. There was slight or moderate fever, headache and general *alaise* in 45 per cent; 7 per cent of these had a rise of temperature above)° C., with abdominal pains and diarrhœa, and were confined to bed. ne of these cases developed serious heart-failure symptoms. Tsugane ncluded that, even with sensitised vaccine, a considerable reaction ay be produced dependent upon the state of health of the subject.

Futaki (1916) recommended Colle's method of heating in the prepa- tion of cholera vaccine, and said that some reaction following injection a vaccine is unavoidable and can be neglected. He considered sen- tised vaccine to be on its trial and experience insufficient; moreover, ıe scientific basis for such a preparation was questionable.

Ishiwara compared the reactions produced by the injection of the nsitised vaccine of the Kitasato Institute and of the heated vaccine of ıe Government Institute on two groups of people under similar condi- ons. According to his observations, there were no general reactions 61 per cent of those vaccinated with the heated vaccine and in 47 per nt of those vaccinated with the sensitised vaccine. There were marked actions in 12 per cent of those injected with heated vaccine, as compared ith 17 per cent in the case of sensitised vaccine. The local reactions, ıch as reddening and swelling, were also less marked when heated accine was used. A second injection of heated vaccine could also be dministered after an interval of 48 hours. Thus in every respect the ated vaccine was superior.

Ishiwara's study was carried out on vaccines sold by the drug-stores ıd he did not take into consideration the strains of cholera used in their anufacture, their quantity and immunological efficiency — a fact which mewhat vitiates his results. At the same time, Takano stated at a ientific meeting that, during cholera epidemics, when the demand ır vaccines iu enormous, it is not rare to find among the vaccines sold ry weak snspensions of cholera organisms. If one desires to make n accurate csmparison of the effectiveness of various vaccines, they ıould be prepored from the same strain of the organism under strictly milar conditioas. Heated discussions followed, and there was a marked vergence of opinion between the Kitasato Institute and the Govern- ent Institute for Infectious Diseases. Workers in the former insti- ıte upheld the superiority of sensitised vaccine and those belonging to ıe latter institute were equally ardent in their support of heated vaccine. ı reading these reports, therefore, these facts should be kept in mind.

In addition to heated and sensitised vaccines, carbolised vaccine was so recommended. Inomata (1916) prepared all the three kinds of accine with one strain of cholera, taking care to have the same quantity the organism in 1 c.c. of each vaccine. He then compared the reac- ons produced in man by their subcutaneous injection. He also tested ıe blood for immunity reactions. He prepared the heated vaccine by

heating the organism at 60° C. for 1 hour; the sensitised vaccine w prepared by sensitising the organism at 37° C. for 24 hours and th washing, so that a large amount of antigen was lost in the process washing. According to his observation, antibody formation is m marked with carbolised vaccine and poorest with sensitised vacci The reaction is mildest with sensitised vaccine and strongest with carb lised vaccine. But, since the object of vaccination is to produce immunity in the body, some reaction is unavoidable. Therefore t carbolised vaccine is the most satisfactory. Prior to this report, Ichika recommended carbolised vaccine because of its mild reactions. La investigations are all in accord that the carbolised vaccine produces m reaction.

Shiga and Yabe (1917) maintained that, in the study of immuni production by vaccines in the animal body, tests for various an bodies in serum are not sufficient: the entire immunity of the anim should be tested. For this purpose, resistance against infection mu be determined by the injection of living organisms into the immunis animal. By this method, they compared the effectiveness of the sen tised and heated vaccines. These vaccines were prepared from the sa strain of cholera, and guinea-pigs were used. According to their resul the degree of immunity produced by both vaccines is the same, but w sensitised vaccine a certain degree of immunity is developed within hours, while no resistance is developed with the heated vaccine in so sh a time. For this reason sensitised vaccine is superior. This superiori was not revealed by estimating the bacteriolysin present in the serum rabbits immunised with heated and sensitised vaccines respectivel There is both a humoral and a cellular immunity, and the antibodies the serum contribute but a part of the entire immunity conferred; it a rule that antibody formation in the serum is weak when a sensitis antigen is used for immunisation. For these reasons, they urged th the resistance test against infection in the animal body should be used determining the efficacy of sensitised vaccines.

Igarashi and Tanaka (1917) injected with sensitised and heat vaccines respectively 51 persons employed, and living under the sa conditions, in the Komagome Isolation Hospital, and the agglutinins a bacteriolysins in the serum of these persons were tested. The fi group of 27 persons each received two doses of 1 c.c. and 2 c.c. of the heat vaccine containing 2 mgm. of the organism in each cubic centimeter at interval of 7 days. The second group of 8 persons received three dos of the heated vaccine, containing 1.5 mgm. of the organism in each cub centimeter. They received 0.5 c.c., 1.5 c.c. and 2 c.c. at intervals of 4 da and 7 days respectively. The third group of 16 received 1 c.c. and 2 c.c. the sensitised vaccine, containing 2 mgm. per cubic centimeter, at interval of 4 days. The vaccines were supplied by the Governme Institute and the Kitasato Institute. The results showed that, two wee after the second injection of the heated vaccine, antibod es present the blood were comparable in amount to that found in recovered chole patients. Antibody formation in the serum of recovered patient

)wever, bears no constant relationship to the severity of the illness.)me carriers have as much antibodies in their blood as recovered iolera patients. They also found that sensitised vaccine does not pro- ıce antibodies any quicker than does heated vaccine, and the amount oduced is also less. In the majority of cases the formation of anti-)dies reaches its height between the 14th and 21st day after the .jection of the vaccine.

Yabe (1917) made an observation on 300,000 people who received nsitised vaccine during the cholera epidemic of 1916, and he found ıat the reactions in all cases were very mild and there were no serious actions or complications : 80 to 95 per cent had very slight local pain no reaction at all, and nearly all — certainly more than 98 per cent — ere able to continue their work without interruption.

Takeuchi (1917) carried out animal experiments and compared the inimal toxic doses with the development of resistance against infec- on. The minimal lethal dose of the sensitised vaccine in guinea-pigs intraperitoneal injection was 125 to 150 mgm.; and by subcutaneous jection 200 to 250 mgm.; and of the heated vaccine by intraperitoneal jection 15 to 20 mgm., and by subcutaneous injection 75 to 100 mgm. hus the toxicity of the sensitised vaccine was decidedly less. There as no difference in the degree of immunity conferred as determined by ıe infection test in guinea-pigs, but after the sixth day the immunity nferred by heated vaccine appears to be somewhat greater than when nsitised vaccine is used. When the bactericidal action of the serum rabbits to which either kind of vaccine had been injected is tested *in tro*, the heated vaccine appears to be by far the more potent of the two.

Sukegawa (1918), from the results obtained in the animal experiments ıd human beings, demonstrated the superiority of sensitised vaccine. le found no difference in the production of bacteriolysin in the two ses, but agglutinins were produced in greater amount by the heated ccine. In human beings, bacteriolysin can be demonstrated from the ird day and reaches its maximum on the fifth day after injection of nsitised vaccine. In case of necessity, 6 mgm. of the sensitised ccine can be injected in one dose and sufficient immunity may be pro- ced by only one injection. Ordinarily, two injections of 2 mgm. and mgm. respectively are made, and the bacteriolysin and agglutinin titres e about the same as those found in the serum of recovered cholera tients. In a few exceptional cases, the immunity reactions remain tirely negative after vaccination. The severity of the reaction fol- wing an injection is determined by the state of health and the conditions life of the individual. For instance, the girls in spinning-mills exhibit rked reactions and there were a few cases which had even more or less vere reactions. About 30 per cent, after inoculation with sensitised ccines, had a more or less severe local reaction; only 4.6 per cent mplained of general symptoms. Only 0.17 per cent were forced to ve their work.

Takaki (1917) injected animals with the heated and sensitised vac- ies prepared on the same day, the former by the Government Institute

for Infectious Diseases and the latter by the Kitasato Institute, a compared the results. According to him, heated vaccine is more pot in the production of antibodies. There was no negative phase produ in guinea-pigs by either vaccine. Guinea-pigs were immunised w vaccines, after which resistance tests were made with the living organis with this test, both vaccines appeared to have equal efficiency.

Kodama (1920) published a report on preventive inoculations c ried out in Formosa, where he found one injection to be more conveni than two, for which reason a sensitised vaccine is to be recommend as it causes less reaction than a heated vaccine. One injection of 4 mg was generally used in Formosa and very good results were obtained. animal experiments, there is no marked difference in the immunity p duced by injection of one dose or by two divided doses of any gi amount. For a rapid production of a high degree of immunity, considered the one-injection method to be better.

Nomura, Sotoma and Harata (1920) inoculated with sensitised a carbolised vaccines 1,110 persons at the Osaka Isolation Hospital : b groups were similar in all respects. According to their report, neit vaccine produced any marked reaction except in rare cases : this is clea shown :

	Injected with sensitised vaccine (874). Per cent.	Injected with carbolised vaccine (236). Per cent.
Local reactions :		
None	13.62	7.63
Mild	52.17	23.31
Moderate	24.48	48.31
Severe	9.73	20.76
General reactions :		
None	75.51	51.27
Mild	21.63	44.92
Moderate.	2.40	3.39
Severe	0.46	0.42

1. (c) Effect of Cholera Vaccine.

The first preventive inoculation against cholera in Japan was ma in 1902, in Kobe, on 78,000 people. Since then, at each epidemic, ino lation has been encouraged. The results of the preventive inoculati are difficult to ascertain with any accuracy. It is true that in anim experiments injection of cholera vaccine confers a certain resistan against infection, and inoculated human beings develop in the bo certain evidence of immunity, but it is a question how effective it is preventing a natural infection. The results of the preventive ino lation in 1902 at Kobe indicated that the infection rate of the inoculat was low, as was the case in the mortality rate of such cases as occurred. is very difficult, however, to compare the infection rate for those w have and those who have not been vaccinated, respectively. Whetl

preventive inoculation is carried out or not, an epidemic of cholera in Japan does not last long. As a rule, when preventive inoculation is extensively practised, the epidemic is at its height. Consequently, there is a tendency to overestimate the value of preventive inoculation. To obtain unassailable results, it would be necessary to divide the population of a certain area into two parts, both living under comparable conditions, and submit one group to inoculation, leaving the other uninoculated. Such a procedure is very difficult to carry out in practice.

Although in Japan preventive inoculation has been practised for a long time, there are no data that enable one to estimate the amount of protection conferred. Furthermore, the virulence of cholera differs in different epidemics as well as at the beginning and the end of an epidemic. It is generally admitted, however, that vaccination diminishes the risk of infection and the risk of a fatal issue should the disease be contracted.

In 1916, when sensitised vaccine was first brought into use, Yabe made statistical observations on 300,000 people who had been inoculated with it. The number of persons inoculated at the early part of the epidemic, including those who were exposed occupationally as well as others, was, in Tokyo, 238,936, or 10.64 per cent of the population (2,244,796), and in the suburbs, 61,988, or 7.64 per cent of the population (811,150). In the city, there were cholera patients among those who had been inoculated (0.13 per 10,000 inoculated persons), and 372 cases among the uninoculated (1.85 per 10,000 uninoculated persons). In the suburbs, no case occurred among the inoculated and 229 cases among the uninoculated (3.09 per 10,000). Thus, when the city and suburbs are combined, the rate of contraction among the inoculated is but one-twenty-fifth of that among the uninoculated. Murata (1902) stated that the three patients found among the inoculated had not received the complete course of inoculations. The course consisted of two inoculations of 2 mgm. and 4 mgm. respectively : the patients in question, for one reason or another, had received only one-third to one-fifth of the usual dose.

In addition to such statistical studies as the foregoing, there are many cases which prove the efficacy of sensitised vaccine. For instance, in a family the one member who had not received the inoculation contracted the disease, while the others escaped; in a factory, cholera patients appeared only among the uninoculated; no case was reported in a ward in Tokyo where preventive inoculation had been widely practised, or in another ward, where 29.15 per cent of the population had been inoculated, while among the uninoculated, 18 cases were reported. Such cases afford the best direct evidence of the value of cholera vaccination.

Sukegawa's report on the results obtained by preventive inoculation with sensitised vaccine in Kanagawa in 1916 is testimony to the efficacy of the procedure. There was no case of cholera among inoculated persons living on boats and in slum districts, but there were several cases of cholera among those who were uninoculated.

In spite of the fact that the inoculation on this occasion was carried out extensively among those who were most exposed to infection, the

majority of the cases were found among the uninoculated : the case mor tality rate among the uninoculated was 74.11 per cent, while among th inoculated who contracted the disease five days or more after inocula tion was 35.71 per cent.

According to observations made in Osaka by Nomura, Sotoma an Harata at the time of the epidemic of 1920, 816,343 persons were inocu lated between June 14th and October 30th, and of these 559,026 person received the second inoculation. Thus 66 per cent of the entire popu lation of Osaka was inoculated and 45 per cent received two injections The number of cases and deaths that occurred and the death rates wer as follows :

	Number uninoculated.	One inoculation.	Two inoculation
Number of persons.	436,208	231,541	380,307
Number of patients	340	28	11
Per 100,000 population. . .	77.73	12.09	2.89
Deaths.	144	11	2
Per 100,000 population. . .	33.25	4.73	0.52
Deaths per 100 patients . . .	42.38	39.28	18.18

The influence of preventive inoculation on the excretion of vibrios by carriers was also studied. The average duration of excretion, among the uninoculated was 3.69 days, and among the inoculated carriers (13 persons) 2.08 days.

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2. Immunological Studies on Cholera Vaccines.

Immunological action of cholera vaccines has been studied by severa investigators.

Sato (1916) studied agglutinin production following the preventiv inoculations on 40 students. On the fourth day after the first inocu lation, the highest agglutinin titre was 120; several had a titre of 3(but the blood of the majority of the students gave a negative reactio On the ninth day, the highest titre was 480; most agglutinated in a dilu tion of 200, and there were only two that gave negative results. Eigh days after the second inoculation, the majority had titres between 48(and 200. There were marked individual differences.

Mano and Onishi (1917) injected heated vaccine into 11 persons 6 of whom received two inoculations and 5 one injection. They foun marked individual variations with regard to the formation of aggluti nins. The highest agglutinin titre was 1280 and the lowest 15. Th formation of bacteriolysins was the same. The highest titre was 1 30,000 and the lowest was 1 : 1,000 c.c. The formation of agglutinin is high in 8 days after the inoculation and reaches its maximum from 1 to 28 days after (average, 3 weeks); agglutinins thereafter gradually decrease, but even 4 months after the inoculation the agglutinin titr is considerable. The formation and duration of bacteriolysin on th whole runs parallel with that of agglutinins, but not necessarily so The appearance of agglutinins and bacteriolysins is more marked after th second inoculation than after the first.

Tamura (1918) found the reaction following injection of heate vaccine to be slight, consequently persons in indifferent health ca be vaccinated if a reduced dose be administered. His observation showed the agglutinin titre at the tenth day after the inoculation t range between 620 and 20, and the results of the bacteriolysis test wer between 0.0001 c.c. and 0.1 c.c. There are marked individua variations in the formation of immune bodies, and the formation o agglutinins and bacteriolysins in the same individual may not neces sarily be in parallel.

Shikata (1919) carried out preventive inoculations on 7,443 soldier in the 7th Division. He mentioned as reactions following inoculatio perspiration and cutaneous eruptions. Nomura and Nagashima reporte the rates of contraction and carrier rate to be lower among the ino culated than among the uninoculated. Yasutomi (1921) reported tha about the same degree of immunity may be conferred by inoculatio with a sensitised vaccine as by an attack of the disease and that thi immunity lasts more than six months. According to Sakai, the agglutinin reaction of carriers is increased by vaccination in some cases, while i others the influence is only slight. Mizoguchi stated that, when an epide mic of cholera necessitates the vaccination of tuberculous patients, normal doses may be given in mild cases, but in severe cases the firs dose should be reduced, and subsequent doses be determined by th severity of the reaction following the first inoculation.

Koyama (1924) studied the relationship of toxicity to immunity reactions. He immunised guinea-pigs with vaccines made from strongly virulent and weakly virulent strains of cholera respectively. His results were as follows. The amount of antibody formation is dependent upon the strain of the organism used but not on its virulence. No biological characteristic indicates the antigenic power of any given strain. Sukegawa (1920) studied the blood picture following the inoculation of cholera vaccine in rabbits, monkeys and man. No changes in the red blood corpuscles are seen, but the leucocytes show the so-called negative phase, with a temporary decrease in the number of polymorphonuclear cells. In rabbits, the number of pseudo-eosinophile cells, and in monkeys and in human beings polymorphoneutrophile cells are decreased in number after vaccine inoculation. This period of leucopenia lasts from eight hours after the inoculation to three or four days. During this period it is difficult to demonstrate free immune bodies in blood. When the leucocytes begin to increase, immune bodies appear and continue to increase with the increase of leucocytes for one to two weeks. On the other hand, lymphocytes increase at first and then after four days they decrease. Other leucocytes show no change. The total leucocyte count is decreased at first and then increased. When rabbits are inoculated with sensitised vaccine, there is an increase of pseudo-eosinophile cells before the appearance of the negative phase. When inoculation is repeated, the blood picture is much complicated by the second negative phase at the time when the leucocytes have begun to increase. If, however, the second inoculation be made when the blood has regained its normal appearance after the first inoculation, the formation of immune bodies is very rapid, changes in the blood picture are slight and there is no marked negative phase. Thus the blood picture gives an indication of the effect of vaccine and of blood reactions. The time of increase and decrease of the polymorphonuclear neutrophile cells (in rabbits, pseudo-eosinophile cells) and lymphocytes respectively is different. Four days after the inoculation there is a point of crossing numerically of these two varieties of cells. There appears to be a certain relation between the form of the lines of this crossing and immunity production.

According to the studies of Murata (1926) on the histological changes of various viscera following the vaccine inoculation, there are circulatory disturbances, deposition of pigment and changes in histiocytic cells, changes in lymphatic tissue, appearance of myelocytes, atrophy by inflammatory reaction, necrosis and atrophic sclerosis. These changes are due to the toxin in the vaccine. The reactions following the inoculation may in fact be due to such changes of the tissues. Sensitised vaccine produces less pathological change than unsensitised vaccine. The most marked changes take place in the blood-forming organs. Both reactive hypertrophy and necrotic atrophy occur, the amount of each being determined by the amount of cholera toxin injected. When a suitable dose of vaccine is used, there are progressive changes, but if the dose of vaccine be excessive regressive changes take place. The above observations were made by repeated inoculation of the vaccine in

rabbits, which were then killed. Spleen, liver, lung, kidney, suprarenal glands, marrow and lymphatic glands, digestive tract, heart, generative glands, and skin were examined.

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The cholera vaccine prepared by the Government Institute for Infectious Diseases is a heated vaccine. The suspension of the organism is heated for one hour at 53° C. and 0.5 % carbolic acid is added. One cubic centimeter of the vaccine contains 1.5 mgm. of the cholera vibrio. It is a mixed vaccine, containing typical, atypical and intermediate types. When the strain of an epidemic is one of the three types, vaccine is prepared with it. Inoculations are made in two doses of 1 c.c. and 2 c.c. or in three doses of 0.5 c.c., 1 c.c. and 1.5 c.c.

The Kitasato Institute prepares the sensitised vaccine. A horse is immunised with the strain of cholera causing the epidemic and the vibrio is sensitised with the horse serum. One cubic centimeter of the vaccine contains 2 mgm. of the organism.

The vaccines are also prepared by certain prefectural laboratories and private institutes. There would be no difficulty in preparing enough vaccines to inoculate the entire population of the country. Existing facilities for the preparation of the cholera vaccines form one of the chief reasons why recent epidemics of cholera in Japan have been checked before extensive damage has been done.

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3. Mixed Vaccines.

Although there is never any necessity for injecting a mixed vaccine
cholera and other pathogenic organisms, the procedure has been
udied by several investigators as a matter of scientific interest.
ıkagami (1917) prepared a mixed vaccine of cholera and typhoid B., and
jected it into his own body. He found that his blood serum, taken six
ıys after the second injection, had a very strong bactericidal action for
)th typhoid and cholera and there was no evidence of antagonistic
:tion.

Tani (1922) examined the agglutinin production in rabbits which
ıd been immunised with a mixed vaccine of cholera, typhoid, dysentery
'lexner type), staphylococci and streptococci. He also found that
:glutinins for each kind of the organisms had been produced at the
:me time. Marked production of agglutinins of one kind do not neces-
:rily induce increased production of agglutinins of the other. It is
rtain that the injection of a mixed vaccine does not prevent the pro-
uction of antibodies by any constituent organism. Nobuta (1914)
ıund that the production of antibodies by injection of cholera and
:phoid vaccines, alternately or at the same time, is not very much
ifferent from that produced by each vaccine separately.

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4. Immunisation by Oral Administration of Vaccines.

Much work has been done on the oral administration of chole vaccine in Japan from early days. Shiga (1907) modified vario methods of immunisation by way of the intestinal tract, and carried o experiments with cholera, typhoid and dysentery. His results wi cholera may be briefly summarised. Cholera organisms suspended 50 % glucose cholera is fed to guinea-pigs and infection tests are ma between 7 days to 3 weeks after the feeding. Since a natural infection impossible, a special method was used. Kuwahara found that an inje tion of one-fifth of the lethal dose of cholera by intraperitoneal injecti into the eyeball of a guinea-pig kills the animal in 4 to 5 days, yet t cholera organism would not enter the blood circulation or viscer According to this method, immunised guinea-pigs were injected wi cholera, but they survived the administration of a lethal dose. Imm nological reactions carried out with the filtered extracts of macerat intestines and the other viscera of such animal were not materia different from those given by the tissues of a normal animal.

Hida and Toyoda (1907) studied the influence of digestive fluid the antigenic powers of cholera, dysentery and typhoid bacilli. T organisms were mixed with pepsin hydrochloride or alkaline pancrea fluid and digested for 5, 24 and 72 hours at 38° C. and then filter through a Chamberland filter. Each fluid was subcutaneously inject into an experimental animal on which immunity tests were subsequent carried out. It was found that agglutinins and resistance agai infection were perfectly formed. The methods of introducing antige into the intestinal canal were then studied. The organism was kill at 60° C. for 30 minutes; lactose was added and it was then dried. T dried powder was put into a capsule and given to an animal with empty stomach. A capsule contains 4 mgm. of the organism. I creasing amounts of the organism were administered. Some days aft the last administration, blood samples were taken and tested for aggl tinins and for resistance against infection. Both tests were positiv Thus animal experiments give grounds for expecting benefit from t oral administration of vaccines. Experiments with human beings however, have not given the results one might have expected fr animal experiments. Later, bacteriologists appear to have lost th interest in the problem. If a living organism of weak virulence cou be taken by mouth in a large amount, a considerable local immuni on the intestinal mucosa might be conferred. It is believed to be dif cult to obtain an effective local immunity with perfect safety by causi a mild illness without true infection.

Recently, Besredka propounded a local immunity theory, a Masaki (1922) studied the mechanism of intestinal infection and immu sation by oral administration of cholera vaccine. According to his stud cholera organisms which are injected subcutaneously or intraperitonea

ch the intestinal canal and therein multiply and produce certain hological changes, while cholera toxin enters the blood circulation d kills the animal. Healthy rabbits or guinea-pigs are not infected swallowing living cholera organisms, but if the mucous membrane of intestine be altered by the administration of bile a certain local im- nity is developed by the oral administration of living or dead cholera anisms. The blood of animals so immunised contains sometimes glutinins. The production of agglutinins is more marked when dead olera organisms are administered, but the blood does not contain y substance which protects against infection. The immunity in such es does not depend upon immune substances in the blood but is rely a local immunity of the intestinal mucosa. When a certain ount of living cholera vibrios is administered to a rabbit which has n treated with bile, definite symptoms are produced (anorexia, er, diarrhœa and cachexia), and in the animals which recover from mild illness a local immunity of the mucous membrane is developed. such an animal be killed by an intravenous injection of the living olera, a few of the cholera organisms can be recovered from the estine. The organism enters the intestinal canal from the blood- eam, but the local immunity of the mucous membrane prevents ection.

Masaki's experiments are based on the assumption that, in the ection of rabbits and guinea-pigs with cholera through other than the al route, the organism enters the intestinal tract by reason of its erotropic nature and there produces an inflammation of the wall of intestine, which facilitates the growth of the organism and reduces resistance of the wall, so that absorption of toxin takes place and is the animal. But according to Mashimo's experiment, the entero- pic nature of cholera is not certain. In the infection of rabbits l guinea-pigs with cholera through other than the oral route, vibrios ltiply at first in the blood, but some are excreted rapidly into the odenum through bile ducts. By swallowing vaccine after the previous ection of bile, which damages the intestinal wall, antigen is absorbed. erefore this method should produce results not very different from se produced by the administration of antigen by other routes.

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Chapter VII.

BIOLOGICAL CHARACTERISTICS.

1. Cholera Toxin.

There is a difference of opinion among investigators as to the e tence of an exotoxin in addition to the endotoxin. Hayami (19 cultured the El Tor strain in a bouillon medium having the optim degree of alkalinity and peptone content, and filtered it through asbestos filter. He found that a two-days culture contained the stro est toxin, and 2 c.c. of it killed a rabbit in two to five minutes. toxin produced by other strains was not so strong as that of the El strain : strong immune serum can be obtained by using the El Tor str Of the immune serum so obtained, 0.05 c.c. neutralised the lethal dose of toxin. He thought that this soluble toxin was the specific toxin of chol

Takano (1918) compared various solutions obtained by wash killed cholera or live cholera and the residual bacterial body. He not find any difference in various immunological reactions and symptoms produced in guinea-pigs with these solutions, and he ca to the conclusion that it is difficult to distinguish in cholera between exotoxin and endotoxin of cholera. When the vibrio dies, the m constituents of the body permeate into the medium, and in all liq media bacteria are continually dying. Consequently, finding toxin in medium is not sufficient evidence of the existence of an exotoxin.

Kodama and Kato (1922) studied cholera toxins and their a bodies. What they called cholera toxin was prepared in the follow manner. The culture on an agar medium is dissolved in 0.1 % pot sium hydroxide solution and filtered through filter paper, when it neutralised with acetic acid; the addition of dehydrated alcohol produ a white precipitate, which is dried. They compared this toxin w living cholera or powdered cholera organisms. They found that, wh cholera toxin is dissolved in a weak alkaline solution, its toxicity often strengthened. They prepared immune sera with living chole dead cholera, powdered cholera, extract of powdered cholera, sedim of powdered cholera, and cholera toxin, and they examined the immu logical reactions produced by each. They found that the agglutin content was lowest in sera produced with toxin and the extract powdered cholera. The least precipitin content was in sera made w living and dead organisms. These sera, however, protected animals agai infection by cholera, but they are unable to neutralise toxin and prot animals from the injection of a lethal dose of cholera toxin or chol dry powder. From these facts, it appears that there is very little h in the serum-therapy of cholera. A study of precipitinogens was a

nde. In bouillon cultures, precipitinogen is found in small amount er 24 hours, and is increased day by day till the 14th day. The alinity of the filtrate of a culture more than 11 days old is increased boiling, and sometimes a pseudo-precipitin reaction is produced. small amount of precipitin is found in the salt solution in which a sh agar culture has been suspended. Most is found in the extract dried bacterial powder. Precipitinogen is destroyed by heating 60° C. for 30 minutes, but precipitinogen in the bacterial body is not stroyed by that degree of heat.

Kabeshima (1913) described in detail the hæmotoxin of the cholera rio. It is important, in carrying out hæmolytic experiments, to ep the various strains of cholera used in uniform conditions. Kabeshima de blood agar plates with sheep blood and the hæmolytic zones und the colonies on the plate were made the basis of differentiation. t of 195 new strains and 11 laboratory strains, 91.7 per cent were molytic, and only 4.6 per cent displayed no hæmolytic action what-er. There were 3 old strains and 1 new strain which had marked molytic action on blood plates within 24 hours, and there were 7 ains which exercised hæmolytic action in sheep-blood suspension id. Certain water vibrios produced a hæmolytic zone on blood tes but had no hæmolytic action in sheep-blood suspension fluid. its determination of hæmolytic activity the duration of culture st be carefully taken into consideration; the blood agar plate thod is the most convenient. There are hæmotoxic and non-hæmo-ic cholera vibrios, but hæmolytic action is not a fixed but an easily iable characteristic of the cholera vibrio.

Toshima (1919) also found hæmolytic activity to be a variable racteristic of the cholera vibrio. When a non-hæmolytic strain rown in symbiosis with a hæmolytic non-pathogenic vibrio, the cholera rio acquires hæmolytic properties. Moreover, many non-patho-ic vibrios have no hæmolytic action, so hæmolytic activity is not important point of differentiation between pathogenic and non-hogenic vibrios. The hæmotoxin of the vibrio combines with blood uscles at low temperature, but does not in these circumstances lay any hæmolytic activity. Heating for 30 minutes at 55° C. troys the action of the hæmotoxin. The hæmotoxin produced in ure of vibrios is gradually inactivated by anti-hæmolytic substances. addition of a small quantity of active hæmotoxin activates the tive hæmotoxin.

Nakatate (1920) also found marked differences in the hæmolytic on of different strains. Yamaguchi (1925) examined a bouillon in ich the El Tor strain had been cultivated with guinea-pig blood uscles and found blood-agglutinating substance in addition to æmolytic substance. The hæmolytic substance, unlike the agglu-substance, had antigenic power. The former is destroyed at 55° C. n the latter at 50° C. The hæmolytic substance is absorbed by elain but the agglutinic substance is not.

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2. Characteristics of Cholera on Culture.

The cholera red reaction is not an absolutely specific feature o
cholera vibrio, for, according to Nakadate (1920), some strains of ch
do not give it. He found the reaction to be sometimes very mark
media without sodium carbonate. Hirano and Shiraokawa (1924) f
that 10 per cent of the peptone-water culture gave the cholera
reaction. O So Ki (1924) considers the cholera red reaction ma
of use in diagnosis. No other bacteria isolated from human or an
fæces give the cholera red reaction. In order to obtain a well-ma
reaction, a culture in alkaline media should be over 18 hours old.
an indicator, beside sulphuric acid, hydrochloric acid, oxalic acid
tartaric acid can be used.

Inouye and Kakihara (1926) found that some strains of cholera
duce hydrogen sulphite, while others do not. This difference dep
on the kind of peptone used in the media, and it is not due to differe
in the nature of cholera strains. For instance, hydrogen sulphi
not produced when Teruuchi's peptone is used, but when Witte's pep
is used it is produced to a marked degree. But even in the latter
if the medium be made strongly alkaline, hydrogen sulphite is not for
In Frenkel's solution with sodium sulphite and oryzanin, hydr
sulphite is formed to a slight degree. Similar results were obtained
about 90 new and old strains of cholera.

The alkaline production of cholera has been described in the se
which deals with culture media. Since the introduction of the dete
nation of the hydrogen ion concentration, changes in the alkalinit
media have been studied in detail. Ando and Yoshioka found
the optimum growth of cholera is obtained in peptone water or bou
with a hydrogen ion concentration of 9.0.

Otsubo found that, when iodine solution is dropped around the
nies on an agar medium, unstained zones around the colonies are
duced. If corrosive sublimate be used instead of iodine, similar z
may be formed. These zones do not appear if the culture media cor
a trace of serum.

Tsujitani (1898) made some experiments regarding the storag
cholera strains. He obtained a cholera vibrio which had retaine
original virulency after being kept 324 days in a sealed glass bottle
20 % peptone water.

3. Formation of Ferment.

Sugar-splitting activity is one of the biological characteristics of the holera vibrio. Moreover, its ability to convert starch into sugar s utilised in the differentiation of cholera from other vibrios. Some f the experiments on this sugar formation have been mentioned in he section on culture media.

Oyama (1911) studied the sugar-forming capacity of various vibrios, nd found that the cholera vibrio possessed it in the most marked egree. This action is very much reduced if an excess of sodium chloride e added to the medium, and is almost non-existent in a 3 % sodium hloride medium. If starch be added to the peptone water in the cholera ed reaction test, a rapid and strongly marked reaction is obtained.

Nobechi (1923) studied the behaviour of cholera in media containing ourteen sugars, four higher alcohols and one glycoside (arabinose, ylose, lævulose, galactose, mannose, maltose, lactose, saccharose, dextrin, mylum, innulin, glycerin, mannite, dulcite, isodulcite, salicin). All ibrios, both pathogenic and non-pathogenic, split glucose, lævulose, alactose, dextrin, amylum and mannite, but the splitting of galactose nd mannite is weak. They do not split arabinose, xylose, innulin, ulcite, isodulcite (rhamnose), salicin and alcohols. The splitting of ıctose and glycerin varies with different strains. Cholera cannot be ifferentiated from other vibrios by its sugar-splitting action.

Kondo also (1925) carried out experiments with eighteen sugars, and ound that lactose at first remained unchanged but after a week gave positive reaction with cholera, but with other non-pathogenic vibrios ıctose remained unchanged throughout. There are some strains which oagulate milk.

One of the ferments produced by cholera is gelatinase. Inouye tudied this gelatinase immunologically. Normal rabbit serum contains ntigelatinase, but, if a rabbit be immunised with gelatinase, a specific nmune antigelatinase is formed. Comparison of the normal and nmune antigelatinases shows that :

1. The action of the normal antigelatinase is weakened by treatıent with chloroform : on the other hand, the immune antigelatinase not so influenced.

2. When serum is made into the two fractions, the normal antigelanase is found in both fractions in a reduced amount, but the immune ntigelatinase is found in globulin.

3. The addition of iodine reduces the action of the normal antigelanase, but the immune antigelatinase is unchanged.

4. Heating at 60° C. destroys the action of the normal antigelatinase, ut the immune antigelatinase is only destroyed at 70° C. The immune ntigelatinase is specific. Immunisation of rabbits with the material om which the gelatinase has been destroyed by boiling, or by being reated with animal charcoal, does not produce antigelatinase.

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Chapter VIII.

THE FATE OF THE CHOLERA VIBRIO OUTSIDE THE BODY.

Cholera, when it invades Japan, as it does from time to time, is most virulent during the summer and with the oncoming of cold weather it gradually subsides.

There are various media which may be instrumental in the spread of the disease, but the most important is water and various articles of food, especially fish. A study of the fate of the cholera vibrio in such articles is therefore of very considerable epidemiological importance.

Nogami (1902) studied the viability of the cholera vibrio in fresh water and sea-water. He found that the vibrio in the sea-water, when kept at 37° C., survived for 3 to 4 days, and in the ice-chest for 9 to 11 days. In sterilised sea-water at 37° C. it survived for 30 to 42 days, and in the ice-chest for 53 to 65 days. In fresh water at 37° C. it survived for 5 to 6 days, and in the ice-chest 18 to 20 days. In sterilised fish water kept in the ice-chest it survived for over 2 months. The sea-water used in this experiment contained 3.1 per cent of salt and 7 bacteria of various kinds per cubic centimeter. The fresh water was the city water and it contained 100 bacteria per cubic centimeter.

Yano, Okazaki and Hiroumi (1904) thought that differences of strains of the vibrio, characters of water and climate would have important influences on the life of the cholera vibrio, and they carried out studies on the viability of seven strains isolated during the epidemic of 1902, in fresh city tap-water, sea-water, well-water and distilled water respectively and kept under various conditions. The sea-water was obtained from a depth of 3 meters below the surface at a point 2 miles from the shore. It contained 2.6 per cent of salt and 2,305 bacteria per cubic centimeter. The well-water was clear, containing a trace of chlorides and 1,216 bacteria per cubic centimeter. The city water contained 5 bacteria per cubic centimeter, while the distilled water was sterilised before use. As to the temperature, the incubator was kept at 37° C.; the room temperature varied with the seasons, the experiments being continued from April 23rd to January 11th of the following year. The temperature of the ice-chest was from 3° to 8° C. and the dark-room was kept at room temperature.

The following table shows the length of life of the cholera vi under various conditions in different media.

	Incubator: Days	Room Temp.: Days	Ice-chest: Days	Dark-roo Days
Sea-water	12	26	27	41
Well-water	12	21	11	17
City water	13	21	13	16
Sterilised sea-water .	83	152	230	209
Sterilised well-water .	135	178	267	245
Sterilised city water .	58	24	45	98
Sterilised distilled water.	53	30	25	74

Thus the cholera vibrio survived longer in a sterilised water, especi when kept in an ice-chest or in a dark-room. It survives longes sterilised well-water. Its survival is comparatively short in uns lised water or in the water in natural conditions. It is interestin notice that the storage in an ice-chest does not materially influence time of survival. This experiment indicates clearly that the cho vibrio in nature is overwhelmed by other bacteria and is exterminа fairly quickly.

The length of survival of the cholera vibrio in sea-water has important bearing on the spread of cholera in Japan. The cho vibrio carried into the coast or ports of Japan by ships from infe foreign ports may cause the disease among fishermen and boatn who in turn pollute the sea-water and spread the disease widely. this reason, the duration of survival of cholera vibrio in sea-water been studied frequently.

According to Matsuda (1910), the vibrio survives for 7 to 11 d when in sea-water if there is no direct sunlight. The impurity of water is of importance : in sea-water where the bacterial flora is ab dant, the cholera vibrio is comparatively quickly exterminated. clean sea-water, the cholera vibrio has a tendency to multiply. vibrio quickly dies in sea-water exposed to direct sunlight.

Further study is needed as to the distribution of the vibrio at d rent depths of water. The viability of the cholera vibrio on dry arti is also an important problem : the vibrio is said to be very sensitiv dryness.

Hata and Matsuda (1906) examined the viability of cholera vibri coal. When the vibrio was smeared on coal with nutrient mediun died out in 3 days, and without the nutrient medium it survived 7 to 21 days. This difference may be due to the fact that, when nutrient medium is present, other bacterial flora multiplies and kills vibrio. It survived for 7 days in a mass of moistened coal, but for 21 d in a mass of dry coal. Moisture during the summer facilitates growth of other bacteria and hastens the death of the vibrio, whi lower temperature prolongs its life.

Suzuki (1921) studied the effect of dryness on the cholera vibrio by ·ying it, smeared on a silk thread, which was placed in a jar with cal- um chloride. He found that the vibrio did not survive more than 18) 28 hours. If a suspension of the vibrio in a salt solution containing small amount of horse serum be dried in a jar as before, it survives nger. If horse serum alone is used for the suspension, the vibrio sur- ves still longer. Similar results are obtained with white of egg, but)t so marked as with serum. Drying the vibrio on a cover-glass quickly lls it.

Foods are closely related to the spread of cholera. Any uncooked od may be dangerous to eat during a cholera epidemic. One of the ost favoured articles of food in Japan is fresh vegetable pickled in lt. If this vegetable be contamined with cholera, the vibrio might ach a person's mouth. The danger is very apparent when one realises at in Japan vegetable gardens are fertilised with comparatively fresh man excreta, and that some vegetables are liable to be washed in ols of water directly exposed to contamination with human excreta. rtunately, however, the cholera vibrio dies very quickly in excreta ring the summer months.

Yokote (1898), taking these facts into consideration, studied the via- lity of cholera in the moisted rice-bran and salt in which vegetable ckles are made. A small amount of the rice-bran mixture was placed a Petri dish and an agar culture of cholera was added. Then at itervals cultures were made in peptone water and on a gelatin medium. ter two hours, the vibrio was no longer demonstrable by culture thods. This is very probably explained by the sterilising action salt and acid in the rice-bran mixture. At any rate, the rice-bran ckle is not an important medium for the spread of cholera.

Yokote experimented by mixing the vibrio directly into the rice-bran xture. If, however, the vibrio be placed on vegetables before they e pickled in the rice-bran mixture, the vibrio is not killed off so quickly. milarly, the vibrio on vegetables pickled in salt survives a certain length time. Raw fish and vegetables are eaten in Japan with a sauce of negar and soy. Therefore the sterilising action of such a sauce is an portant subject for study.

Kitashima (1904) found that the cholera vibrio is killed in 27.37 % negar within 5 minutes and in 11.11 % vinegar within 30 minutes. When gm. of cabbage, cucumber, shellfish or fish-meat which had been eviously infected with cholera vibrio were placed in 10 c.c. of vinegar, te vibrio on the vegetables was killed off in 30 minutes, and on shellfish fish-meat it was killed off in 1 hour to 2 hours. Therefore he concluded t at these articles of food should be soaked in vinegar for 2 hours or nger before they are eaten : 36 per cent of soy would not kill the olera vibrio in 6 hours. Pure soy does not manifest its sterilising action r over 2 hours. Therefore food articles soaked in soy are not devoid danger.

Fish is regarded as the most important article of food for the spread cholera in Japan. Fish may be exposed to polluted sea-water and

the danger is greater when the fishing population is infected. Tak (1913) studied the viability of cholera on fish. At room temperat in the month of October, the vibrio smeared on fish-meat survives 3 to 4 days and in the ice-chest for 10 to 12 days. In such conditi the fish is entirely decayed, yet the vibrio is still recoverable. isolating the vibrio from such material, the peptone-water metho not certain : Takano found Kabeshima's hæmoglobin agar medi to give very satisfactory results.

If the cholera vibrio be smeared over the scales of fish, on the surf of fish-meat, or on the surface of beef, it tends to increase for the f 20 hours. If the fish or beef be left alone without handling, the vi does not spread over a distance of more than 1 centimeter. It d not pass through uninjured fish-skin into the subcutaneous tissue, the vibrio smeared on the surface of fish is not entirely removed by wa ing with water. The cholera vibrio smeared on fish at first increases room temperature and then begins to decrease, but, as already stated survives even after the fish is entirely decayed.

The vibrio smeared on the body of fish is not killed in sugared vine for 2 hours. It survives for over 20 hours at room temperature in vineg bean-paste, and soy has even less disinfecting power than has vineg bean-paste. In short, it may be said that fresh fish prepared w vinegar, bean paste or soy is dangerous food during a cholera epiden

When fish kept in a glass jar are fed with food containing chol vibrios, the organism can be demonstrated in the intestine of the fi The vibrio is naturally also diffused in the water and becomes attac to the surface of the fish. If such a fish be moved to fresh clean wat it is found that the vibrio entirely disappears in 4 1/2 days. Even wl a fish is kept in water containing cholera vibrios, the vibrio does penetrate through the skin.

Nishiki (1913) studied methods of disinfecting fish. For practi purposes, it is important that the method should be rapid, easy a capable of disinfecting large quantities; moreover, it should not inj fish as food. Nishiki selected as disinfectants hydrochloric acid, ace acid and formaline. The cholera vibrio was smeared on the surf of fish, which were then soaked in various concentrations of the dis fectants, a piece of the fish being removed from time to time and c tured. Hydrochloric acid solution 10 % required 3 minutes and 2 da in 0.1 % to kill the vibrio; in acetic acid, 15 minutes in 10 % was requir and 3 days in a 0.1 % solution, and in formaline solution 10 minu in 3 % and 3 hours in 0.1 % dilutions. In saturated sodium chlori solution, the vibrio lived for 4 days, and in a 10 % solution for 8 da

This experiment shows that disinfection of fish with the disinfectar is not feasible if the food value is to be retained. Salting of fish not a safe disinfecting method. Undoubtedly the best method is boil the fish before eating.

Pollution of sea-water is of frequent occurrence, and the possibili of fish becoming contaminated is a practical problem of importan The Sanitary Section of the Kochi Prefecture reported that chole

vrios were recovered from a large proportion of the fish caught in the by which had been polluted with cholera.

Kabeshima (1917) experimented with salt-water fish at the Saseho Navy Hospital and ascertained that the cholera vibrio in polluted water eters the intestine of fish very readily. The viscera of even dead sh in polluted water may be infected with cholera vibrios. He concluded t at disinfection of fish while keeping it edible is practically impossible. The only method is salting for a week, which is sufficient to kill the colera vibrio.

Thus, fish, which is one of the staple foods of the Japanese, is a ry dangerous food during a cholera epidemic. The general public r ognise the danger and abstain from eating it. It is true that boiled fi is safe, but, during preparation, kitchen utensils, such as knives a d chopping boards, may become contaminated and thus indirectly c avey infection. For these reasons, during an epidemic, fishing and th use of sea-water in dangerous districts are strictly prohibited. Te loss thereby entailed by fishermen and fish-merchants is enormous, a act which adds to the importance of the question and has in part been r ponsible for the large amount of attention that has been devoted t it.

Toyama for several years past has been studying this problem at t State Institute for Infectious Diseases. The following subjects h ve been investigated : (1) Chemical disinfection; (2) Physical methods o disinfection; (3) The fate of the cholera vibrio on fish; (4) The relation-sh p of cholera to oysters and other shellfish and their disinfection.

1. *Chemical Disinfection.* — Selecting over 80 disinfectants, he is c mparing the disinfecting power of each against cholera in test-tubes. H is attempting to find an economical and effective disinfectant for the d infection of fish and meat, but has not yet reached any definite c nclusions.

2. *Physical Methods of Disinfection.* — The effect of temperature on h cholera vibrio under various conditions has been studied. When h cholera vibrio is kept at 20° C. below zero in distilled water, city w ter, physiological salt solution, 1 % to 10 % salt solutions, it dies o t in 24 hours. Cholera kept in sea-water survives 5 days; in 1 % to 5 salt solution it survives 4 days, and in 10 % salt solution 1 day. W en the medium contains certain nutrients, the vibrio survives longer. At the same temperature, 20 degrees below zero, the cholera vibrio in p tone water survives for 11 days and in meat broth for 3 weeks, in b illon for 26 days and on the slant agar medium for 42 days. If the c olera vibrio be placed in a medium containing little or no nutrients, it d. out very quickly at a low temperature. In subjecting the vibrio t freezing temperature, its numbers very rapidly decrease at first, but f w survive for a long time.

In the winter in Tokyo when the temperature is coldest, the exposure of the cholera vibrio in distilled water to the outside air kills it in 1 day. In the city water, it survives for 1 day and occasionally as long as 4 days; in physiological salt solution for 1 day to 2 days; in 5 % chemically

pure salt solution for 1 day; in sea-water about 1 week. The effec sea-water varies with the place from which the water is taken. In p tone water it survived for 15 to 16 days and in bouillon for 7 mon but in unsterilised bouillon it survived only 52 days. On agar med it survived for 131 days.

The viability of cholera in earth depends largely upon the ki and characters of the earth. It survived from 1 day to 2 days to o sionally 2 1/2 months. Ordinarily it survived for 1 week to 3 week

In short, the cholera vibrio, if placed in a suitable medium, is rea affected by cold temperatures.

The cholera vibrio is readily killed by heat. On fish it is killec boiling water in 1 minute, at 80° to 90° C. in 2 minutes, at 70° C 3 minutes and at 60° C. in 7 1/2 minutes.

3. *Fate of Cholera Vibrio on Fish.* — The experiments were car out mainly with fresh-water fish. Cholera vibrios smeared on fish left at early summer temperature in Tokyo survived for 7 to 10 da The same result was obtained by smearing the vibrio on fish which been sterilised with steam. During midsummer, it survived onl to 3 days. When kept in an ice-chest at a temperature of 3° to 8° it survived for 14 to 19 days, and occasionally 25 days. The sa results were obtained with different fish. The cholera vibrio survi regardless of temperature even after the fish was decayed.

During summer, the cholera vibrio smeared on the surface of tuna or devil-fish has a slight tendency to increase at first, but it soon gins to decrease. The growth of cholera on the surface of meat is simi

In salt solution, the cholera vibrio does not grow and it is gradu killed. The effect is more marked when pure sodium chloride is u instead of impure salt solution. When the cholera vibrio is suspen in a solution of chemically pure sodium chloride at 37° C., it in 1 % solution in 1 month, in 5 % solution in 20 days, in 10 % or o in 1 day. At room temperature in the autumn season, it is killed 1 % solution in 1 month, in 5 % solution in 1 week, in 10% solutior 1 day. At 2° to 4° C. in the ice-chest, in 1 % it is killed in 10 days 5 to 10 % in about 15 hours and in over 15 % solutions in about 7 hours. Ordinary cooking-salt contains many impurities and the chol vibrio in a salt solution made with such salt survives longer. In ice-chest, it survives for 15 days in 1 % to 5 % solution, for 3 days 10 % solution, for 2 days in a 15 % to 25 % solution, and for 14 ho in a saturated salt solution. In salting fish, if impure salt be used a left at a room temperature, the cholera vibrio survives for 2 wee The effect is better if the abdominal viscera of the fish be removed a the fish be packed in salt.

Cholera vibrios on the surface of fish left outside the house dur midwinter survive for 8 days to 2 weeks. The same length of viabil is obtained with cholera on meat and vegetables treated in the same w

4. *Relationship of Cholera to Oysters and other Shellfish and th Disinfection.* — When an oyster, shelled or unshelled, is placed in fre sea- or salt waters which are contaminated with the cholera vibrio,

·brio enters the stomach within 1 minute. When oysters and clams are ept in cholera-polluted sea-water at a temperature of zero to 5° C., the brio survives for 1 1/2 months, and at 22° C. for 15 to 20 days. When ıelled oysters or clams are kept under the same conditions, the vibrio ırvives at low temperature for 20 days and at 22° C. for about 15 days. holera vibrios smeared on oysters and clams which have been killed and erilised by boiling survive for over 20 days.

When cholera vibrios are smeared on shelled oysters kept at a room mperature of about 20° C., their number at first decreases, but soon gins to increase, and reaches its height in 68 hours, after which there a gradual decrease, and in 171 hours the vibrio entirely disappears. he vibrio grows very much better on an oyster than an ordinary fish.

The cholera vibrio smeared on an oyster which is then soaked in 1 % etic acid survives for 60 minutes, and the vibrio in the stomach of the ıster survives for 7 hours. In 2 % acetic acid the surface vibrio dies 15 minutes and those in the stomach in 7 hours; in 3 % acetic acid, ıe surface cholera is killed in 7 1/2 minutes and in the stomach in hours; in 4 to 5 % acetic acid the surface cholera dies immediately, ıd in the stomach in 45 minutes. Thus the cholera vibrio on the sur- ce of an oyster is easily disinfected, but the vibrio in the digestive stem is not so readily killed.

Thus there is no suitable method of disinfecting fish and shellfish ntaminated with the cholera vibrio except boiling. Fish which can be lted can be disinfected in a certain period of time, and those kinds hich can be completely dried are disinfected by the process.

In view of the importance of methods of disposal of human excreta the spread of cholera, the viability of the cholera vibrio in the night- il is a problem that calls for study.

Watanabe and Kawaai (1924), keeping a mixture of fæces and urine ıder as natural conditions as possible, added a culture of cholera. It as found that, in the early summer and early autumn, the cholera brio survived for 24 hours and in the winter for 15 days.

Cholera vibrios in sewage, according to Ohwada's experiment (1924), ırvive for 1 day at 37° C., for 4 days at room temperature, and for 2 days in the ice-chest. The vibrio in sewage water survives 6 days room temperature.

Iwata (1925) urged the necessity of chlorinating the water supply, ıd recommended the use of bleaching powder instead of liquid chlorine, nce the supply of the latter is insufficient in Japan. He determined ıe available chlorine and tested its disinfecting power against the ıolera vibrio. He found that a dilution of 900,000 in clear water kills ıe cholera vibrio in 15 minutes, a 1,200,000 dilution in 20 minutes, a 500,000 dilution in 30 minutes, and a 2,400,000 dilution in 1 hour. e found that the cholera vibrio in peptone water grows in a fairly ncentrated chlorine solution.

Ohwada's experiments also showed that the disinfection of sewage ith bleaching powder requires a concentration of 1 in 30,000 (for 15 inutes to 1 hour). The disinfection of sewage contaminated with cholera

is important in such a place as Tokyo, and during the recent epide chlorine disinfection was carried out at the sewage disposal plant. T necessity led Ohwada to study the subject; his results were as follo

Time required for Disinfection	Kinds of Water	Dilution of Bleaching Powder	Dilution of available Chlorine
15 minutes. . .	Fresh sewage	30,000	100,000
15 minutes. . .	Oxidised sewage	50,000	170,000
30 minutes. . .	Fresh sewage	30,000	100,000
30 minutes. . .	Oxidised sewage	80,000	280,000
1 hour	Fresh sewage	30,000	100,000
1 hour	Oxidised sewage	100,000	350,000

Thus the proportion of chlorine required varies according to t character of the sewage. Untreated sewage requires more chlorine.

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Chapter IX.

CLINICAL STUDIES.

1. Development of the Disease.

Ichikawa (1916) described the types of skin rash which may be s on cholera patients. According to him, the types of the skin lesions manifold. In the majority of cases the rash is erythematous, wh there are in some cases urticarial, erysipeloid or scarlatinoid eruptio Generally the rash is more or less elevated, and, if diffused, the s becomes swollen. The slighter rashes are roseolar, typhoid or syp litic in forms, but vesicular or pustular rashes may be seen. The ras pass away within one to two days, but occasionally more than a w may elapse before complete disappearance. When the rashes are fou all over the body, they persist longer than when they are circumscrib Desquamation follows the acute stage of the rashes. Rashes app not only on the skin but on the mucous membrane as well, between t 7th to 12th day after the onset; in the majority of cases they appear the 10th, with appearance of the eruptions. The eruption may or m not be itchy. It has been said that the appearance of the erupti indicates a good prognosis. But death usually takes place within 2 4 days after the onset. Therefore the rash appears after the criti period has passed away. The eruptions appear in about 78 per cent the cases, and in 5 per cent they were very marked. The rash may ve probably be due to an anaphylactic phenomenon accompaning t development of immunity against the cholera toxin.

Matsuo and Nakahori (1916) described the symptoms and cours in 43 cholera cases in the Kyoto Isolation Hospital. Murayama (191 describes the course of 207 serious cases. Out of this number, the were 58 recoveries and 149 deaths. Out of 66 mild cases, 65 recover and 1 died. The 38 cases of choleric diarrhœa all recovered. The were 94 males and 77 females who recovered and 150 males a 35 females who died. Many cases died on the first or second day. The were 4 cases which died within 12 hours and 6 within 24 hours. Ninete cases of which the exact time of onset was unknown died some time duri the 1st and 2nd days. There were 21 deaths on the 2nd day, 20 on t 3rd, 13 on the 4th, 8 on the 5th, 13 on the 6th, 10 on the 11th day disease. Those who died on the 6th to 9th days had uræmic sympton As to the cause of infection, many of the cases could attribute the disea to the eating of fish or ice. In the majority of cases there was no de nite incubation period. The shortest reported was 18 hours and t

ngest 3 days. The majority of the patients were between 21 to 30 years f age. The rate of male to female was 200 to 111.

There were 62 cases who developed the disease while they were olated (not carriers), and of these 48 recovered and 14 died. The case ortality rate of this group of patients was 22.58 per cent : this indicates hat the disease is milder when the onset is retarded. Most of the atients were boatmen or fishermen, a fact which supports the statement lready made that the spread of cholera in Japan is largely due to pollu- ion of sea-water. In the majority of cases mixed remained clear, but n exceptional cases it became clouded. Palpitation of the heart and iscomfort in the chest were complained of in the majority of cases. Ninety-seven cases had marked cyanosis : a few had fever just before or llowing the onset. The hoarseness is due to the loss of body water, ebility and vomiting. The duration of vomiting varies, but as a rule he frequency decreases with the course of the illness. There were cases n which the vomiting lasted for 12 days. The longer the rice-water tools continue, the worse is the prognosis. The rice-water stool may ontain pinkish or meat-juice-like fluid; sometimes mucus and bile juice re mixed in it : 20 cases out of the 30 who had such stools died.

Cholera vibrios have never been demonstrated in the blood or urine. he cholera eruptions appeared mainly on the 8th to 12th days and they ere seen in 6.7 per cent of the total cases. The eruptions assumed arious forms; sometimes they were like measlesor roseolar. They were ttended with itching.

Anuria occurs in most cases during the 1st and 2nd days. If it lasts nger, the prognosis is bad.

According to Kamimura and Tsuda, the majority of cases have an ncubation period of 3 days. More than four-fifths of the total number ad an incubation period of less than 5 days. It is shorter in children ss than 10 years of age, and in females than in males.

Wakamatsu, Suzuki and Anjo (1922) made a hæmatological study of holera patients. There is marked increase in the number of red blood orpuscles with the onset of the disease. The number of the red cells ometimes exceeds 8,000,000. Normoblasts may appear : when they o, they indicate a serious condition of intoxication and the prognosis is oor. The hæmoglobin shows a tendency to decrease from the beginning, nd the index is less than 1. The number of leucocytes is highest at the ræmic period, and most of the cases who had over 20,000 died. The ighest count was 38,000. In the final stages of the disease, the leu- ocyte count is low. The ratio of red to white cells is always less than ormal because of the increase of the leucocytes. The increase of the olymorpho-leucocytes at first is slight, but with the onset of the intoxi- ation symptoms they gradually increase, and finally myelocytes may egin to appear and justify a bad prognosis. The lymphocytes are ecreased from the beginning, and if the diminution is progressive the rognosis is poor. The large mononuclear cells are slighly decreased uring the acute stage, but the decrease is within physiological limits. hey increase with the recovery in number of other leucocytes.

Eosinophile cells usually disappear during the acute stage, but in a few ca which died with uræmia there were eosinophile cells just before dea The viscosity of blood is markedly increased; the highest observed v 22.8. In most cases the viscosity becomes normal in a week. Blo platelets at first tend to decrease, but they increase after recovery the patient. They have a close relation with the hæmorrhagic diathes

The above blood findings indicate that the symptoms of chole during the acute stage are due to the loss of water from the body, and t symptoms produced during and after the uræmic period are due to t intoxicative effects of the cholera toxin.

Yagasaki, Watanabe and Ohshima made clinical observations on 1 (70 males and 42 females) cases taken into the Komagome Isolati Hospital during the epidemic of 1922 in Tokyo, where there were 1 patients. The majority attributed their infection to fish. The dea rate was 34.8 per cent, lower than in former epidemics (in Tokyo, it w 51 per cent in 1912 and 48 per cent in 1916). There were 72 serio cases, 19 mild cases and 21 cholera diarrhœa cases. Twenty-one cas had fever in excess of 37° C. before the 3rd day of the illness; 26 cas had a rise of temperature on or about the 7th day. Those patients wi typhoid symptoms had a continuous fever of about 38° C. Sometim there was a mild intermittent fever without complication throughout t entire course of the disease. In many cases diarrhœa was seen at t onset, and vomiting was comparatively rare. Not more than 14 stoo were passed in a day by any case, and rice-water stools were seen on during the first 3 days. After that, the stool becomes like bean-pas soup. Sometimes mucus or bile may be passed with the stool. Ric water vomit is seen for the first 1 to 3 days; later, the vomit contains dirty coloured bile-stained mucus.

During the algid stage, the skin becomes sodden, inelastic and clammy with marked cyanosis. The pulse and heart-sounds are extremely wea and the blood pressure is lowered. At the stage of reaction the puls and the heart action recover, first apical sounds resembling that of digitalis heart-sound. The second pulmonary sound is also accentuate The dullness over the heart is somewhat enlarged toward the left sid The pulse rate is not uniform, but as a rule it is not very frequent. Eve at the critical period the rate may remain as low as 60 to 70. None o the cases had Ashnell's symptoms nor had any of the cases strong posi tive Levy's symptoms. The injection of atropin did not influence th pulse rate or blood pressure, but the injection of adrenalin increased th pulse rate and blood pressure. Thus the pulse and blood pressure o cholera patients are sensitive to adrenalin and there is an increase irritability of the sympathetic nerves.

Consciousness is generally clear, except in serious cases, in whic delirium may supervene. The muscles are very irritable. The gas trocnemius muscles in the early stage may be painfully irritable in many cases and in all cases idiomuscular jerking can be observed. This may be due to an increased irritability of the muscles. This symptom may persist even in the convalescent stage. During the algid stage, tendon

eflexes are accentuated, but become normal or slightly weakened in he convalescent stage. The respiration is usually normal. The voice uring the algid stage is husky or it may be lost entirely. Anuria is ommon, especially during the uræmic period; other cases may pass 0 to 100 c.c. of urine per day. The amount of urine passed is an indiation of good or bad prognosis. When anuria persists for 4 or 5 days, he prognosis is extremely bad. 43 per cent of the fatal cases had anuria. 'he urine at this stage is strongly acid and contains a large amount of lbumin. Red blood corpuscles and cylinders may be seen. There s no sugar in the urine at any stage. In many cases, the indican and reatinin reactions are strongly positive.

As to the eye symptoms, during the algid stage of the disease the pupil s dilated and reacts sluggishly to light. They return to normal during ne stages of reaction and convalescence. The pupils may be unequal n some cases. There may be marked conjunctivitis with or without orneal ulcers.

The typhoid state is ushered in on the 9th to 13th days, during the eaction stage after the algid period. During this stage, the face is xpressionless, the tongue is coated and the abdominal wall is retracted. he fever, though slight, continues for some time, and the conjunctvæ are congested. The mentality is clouded. The cholera eruptions ppear on the 8th to 14th days and disappear in (an average of) 5 days. hese eruptions are measles-like, scarlatinal or erythematous. The rognosis of those who have eruptions is good.

As complications may be mentioned parotitis, hæmorrhagic enteritis, etany and œdema during the convalescent period. The œdema of the onvalescent period accompanies sensory disturbances, the urine output large and contains no albumin. The œdema lasts about 2 to 10 days nd disappears suddenly. This œdema in all probability is not due to isturbance of the functions of heart and kidneys.

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2. Cholera Carriers and the Duration of Vibrio Excretion

Bacteriological examinations are made in Japan of both cho
patients and contacts,[1] so that much information has been colle
regarding the healthy carrier and the duration of excretion of cho
vibrios. Tokunaga (1910) examined the excreta of the families
cholera patients and other contacts, during the Osaka epidemic of 1
Out of 2,147 persons thus examined, 49 (2.3 per cent) had cholera vib
in their fæces. The longest period during which such healthy carr
continued to excrete the vibrio was 10 days. The carriers were of b
sexes in equal proportion and persons of all ages are equally suscept
of becoming carriers. The cholera vibrio excreted by carriers is ident
in all respects with the ordinary cholera vibrio.

Sakai (1916) reported as to the duration of excretion of the vib
among 112 carriers found among the persons detained in the To
Quarantine Station. The following table summarises the results.

Days	1	2	3	4	5	6	7	8	9	10
Carriers	52	5	2	10	8	9	6	7	2	1

Days	12	13	14	15	16	17	18	19	20	21
Carriers	2	0	1	2	0	0	0	1	1	2

Thus the majority of the carriers were found excreting the vibrio o
on the day of their discovery as carriers, and the great majority had cea
excreting the vibrio within 1 week. At the time of their discovery
carriers, the agglutinin reaction of their serums was generally negati
After 7 or 8 days, the reaction became fairly strong. Ishiwara repor
that, out of 2,490 persons quarantined, 110 were found to be carr
and 51 developed the disease. Thus carriers were more numerous th
those who developed the disease. During the epidemic of 1916, Ya
saki observed the number of days of vibrio excretion among the
cholera patients in the Komagome Isolation Hospital in Tokyo. He fou
that in many cases vibrios were excreted continually up to the end
the 3rd week. There were cases in which excretion persisted to the 3
and 40th days. In some cases a re-excretion of vibrios occurred af
vibrio-free intervals. There was no correlation between the number
days of excretion of vibrios and the seriousness of the disease.

Noda, Nomura and Harata, of the Osaka Quarantine Station, e
mined the fæces of 4,865 contacts quarantined at the station : 68 of th
developed cholera and there were 101 carriers. This number of carri
was just 10 per cent of the total cholera patients in Osaka at the ti
and was equivalent to 2 per cent of the total number of pers
quarantined. There were slightly more females than males, and many
the carriers were between the ages of 16 and 25, the youngest be
2 years of age (2 cases) and the oldest a case of 79 years. As to occupati
boatmen, stevedores and artisans predominated. The shortest peri
of vibrio excretion was 1 day, the longest 14 days, with an average
5 days. During these periods, however, the vibrio may not be fou
each day.

Izawa (1916) kept under observation the cholera patients isolated t the Kyoto Isolation Hospital chiefly with regard to the duration of xcretion of the vibrio. He found the shortest period to be 12 days, the verage duration 34 to 35 days; in 1 case it was 40 days and in a very xceptional case the patient kept excreting the vibrio for $4^1/_2$ months. 'his patient had normal-formed stools on and after the 29th day from he commencement of his illness, but the vibrio was continuously xcreted. The morphology and agglutinability of the vibrio underwent o change during this long period.

At the time of the epidemic of 1919 in Osaka, Nomura, Sotoma and Iarata reported that, out of the 302 persons quarantined, there were cases of cholera and 10 carriers, equivalent to about one-sixth of the otal cholera cases in Osaka. The majority of the carriers were young. 'he average number of days of excretion of the vibrio by the carriers 'as for males 5.4 days and for females 2 days. They also reported neir observations during the epidemic of 1920, when there were 392 holera patients and 77 carriers, equivalent to about 20 per cent of the otal patients. The average number of days of vibrio excretion 'as 3.54 days, the shortest 1 day and the longest 12 days. When the stimated number of days of excretion of the vibrio before their determiation as carriers was added, the average became 6.96 days, the shortest days and the longest 15 days. There were 13 persons who became arriers after they had received a preventive inoculation. Their average eriod of vibrio-excretion was 2.08 days. The average period to 57 carers who had not been inoculated with preventive vaccine was 3.69 days. bout one-half of the above 70 carriers had diarrhœa and might be garded as cases of cholera diarrhœa. In such cases, the duration of ibrio excretion was somewhat longer.

Shiiba reported that, during the spring following the severe epidemic cholera of 1920 in Chosen, an examination of the fæces of 11,650 perons was made in the regions where cholera patients and carriers had been eported. Not a single carrier was found. Thus in Chosen as well as Japan it seems improbable that a carrier should harbour the vibrio roughout the winter and so give rise to a spring epidemic.

Amata, Nagawo and Nakamura and Hasegawa observed 33 carriers nd 4 cases among the 391 persons quarantined as contacts at the time the epidemic of 1922 in Tokyo. There were 17 carriers discovered as ne result of 1 fæcal examination, 5 cases by 2 examinations, 12 cases y 3 examinations, 2 cases by 4 examinations and 1 case by 5 examinaons. The number of days of vibrio excretion was as follows :

ays	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
arriers . . .	6	4	2	5	3	4	1	2	2	2	2	0	0	0	1

There were 5 cases in which there was an absence of the vibrio from he stools for periods of from 3 to 5 days.

Oshima, in 1922, reported on the examination of cholera patients in ne Komagome Isolation Hospital. The following method was used : sample of stool was cultured in peptone water for 6 hours and then one

loopful from the upper layer was planted on Dieudonné's medium an incubated for 12 hours at 37° C. The colonies grown on the mediu were carefully examined. Taking the rate of the excretion of the vibr during the first week as 100 per cent the rates in 5 subsequent weel were 45.6, 25, 16.2, 7.3 and 1.6 respectively. The longest period of vibr excretion noted was 40 days.

Some of the reports on the duration of the period of vibrio-excretio are summarised in chapter X (f).

3. Serological Reactions of Carriers and Convalescents.

Sakai (1917) studied the agglutination reactions of blood sampl from 84 cholera carriers. The highest titre among them was 2,000, an over one-third of the total number had a titre of over 200. The highe titre was reached in many cases on the 4th, 5th, 8th and 9th days after the determination as carriers. There were cases in which the highest titr was reached as early as the day of determination and as late as the 19t day after. Thus there is no correlation between the titre and the dur tion of the carrier state. The agglutination reaction becomes negativ in 17.4 per cent when the carriers are released. The number of da before the agglutination reaction becomes negative in the early cases 12 days and in the late cases 32 days, the average about 15 day Although there is no definite correlation between the agglutinin titre an the length of time the vibrio is excreted, as a rule the titre is high in thos who excrete the vibrio longest. The number of days during which th cholera vibrio was excreted was in the shortest case 1 and in the longes case 21, the average being 8 days. There were 9 cases in which th vibrio was re-excreted after an interval of 9 to 15 days.

Toguchi (1919) compared the bactericidal and agglutinin titre c blood samples taken from 10 recovered cases, 5 carriers and 5 norma persons. The agglutinin titre of these cases is generally weak, and ther were only 2 cases which gave positive reactions in dilutions of 80. I 5 cases the reaction was negative in the dilution of 1 to 20. As a rule th titre of the carrier is stronger than that of normal persons, and ther were cases among the convalescent which also had a higher titre tha normal. Toguchi recorded marked bactericidal reactions with blood sam ples of 4 out of the 10 convalescents. In 5 of the 10 cases, the agglutinir titre was parallel with the bactericidal action, while 2 of the remainde gave quite opposite results. The immunological reactions of the carrie are not uniform, and in some cases they are not any stronger than thos of the healthy person. The existence of healthy carriers must therefor be explained on some basis other than the immunological reactions o their blood serum.

Shiiba and Koyama (1920) made similar experiments with bloo samples from 97 convalescents (46 Japanese and 51 Chinese) and 6 carrier and found that in both immunity reactions are present to some degree In convalescents the highest agglutinin titre was reached in 2 to 3 week

d the strength varied with the individual. The titres among the Japa-se were between 80 and 640, while those of the Chinese were 40 to 160. ie highest titre was 5,120, and there were only 7 out of 97 cases who had res of over 100. With the Neisser and Wechsberg test, the bacteri-lal action was manifested in the Japanese with 1/12,000 c.c., to 1/25,000 ., and in Chinese, 1/6,400 c.c., to 1/12,000 c.c. In a majority of the ses, the bactericidal titres were between 1/6,000 c.c., to 1/25,000 c.c. ie agglutinin titre and the bactericidal titre may run more or less rallel.

Tagami and Watanabe (1920) also examined the blood of convales-nts. The agglutination reaction was positive in 87 per cent of the cases. The majority had a titre of over 50. The reaction begins to pear from the 3rd or 4th to the 10th day after the onset of illness. the latest case it appeared on the 15th day. In many cases the ghest titre is reached in 1 to 2 weeks, after which it decreases gradually til the 3rd week, when the decrease becomes more rapid, and it ually disappears within a month. Seventy per cent of the cases give sitive reactions on the 9th to 16th days. In exceptional cases the re may reach 10,000, but ordinarily the highest is between 100 and 0. The agglutination reaction appears later in the serious than in the ld cases, and it also reaches the highest point more slowly. With the isser and Wechsberg method, 89 per cent of the 91 cases gave posi-ie (bactericidal) reactions with 0.01 c.c. of serum. This reaction pears earlier than the agglutination reaction and develops more pidly; 80 to 85 per cent of the cases become positive in 1 to 3 weeks. er the 3rd week the reaction decreases comparatively quickly and only f of the cases are still positive after 1 month. The agglutination d bactericidal reactions do not run parallel, but sometimes quite positely.

For the control, these authors examined blood samples from 81 healthy rsons and patients with diseases other than cholera. They found serum which gave positive agglutination reactions with cholera vibrios dilutions of over 50, and there were only 4 cases of positive reaction h dilutions of 20. As to the bactericidal reactions, there were only positive cases with 0.1 to 0.05 c.c.

Kodama (1906) searched for the site of production of agglutinins in animal body. He injected rabbits with the heated vaccine, killed animals at different intervals after the injection and sought for aggluiins in the extracts of various viscera and in the serum. He found t agglutinins are only demonstrable in extracts of the liver 45 hours er the intraperitoneal injection, and 77 hours after the subcutaneous ection, and no agglutinins were demonstrable in the serum of other cera at that time. He therefore concluded that the cholera aggluiins were formed in the liver instead of the spleen.

Kusama and Kouda (1909) also searched for the site of production cholera bacteriolysin, injecting dead cholera vibrio into rabbits, and, arying intervals after the injections, killing the animals and testing for cteriolysins in various viscera by the Neisser and Wechsberg method.

They found that bacteriolysin appears in the blood and in the spl 21 hours after the injection. Until the 3rd day the amount of b teriolysin in the spleen is more or less the same as in the blood. other viscera contain bacteriolysins but to a lesser degree than the sple Thus it appears that the spleen not only stores but also produces it. splenectomised animal, however, produces bacteriolysin. Therefore spleen is not the only organ which can produce it. It is not kno whether the blood corpuscles and bone marrow form bacteriolysin. production in the tissues at the site of the injection is not proved, nor i proven that bacteriolysin enters the gall-bladder or the aqueous humo

Kabeshima (1922) studied the fate of the cholera vibrio in the ab minal cavity of guinea-pigs during Pfeiffer's phenomenon. He kil the guinea-pigs which gave positive results and made cultures from abdominal fluid and heart blood. For a considerable time after appearance of the positive reaction he was able to cultivate chol vibrios. Thus, although microscopically Pfeiffer's reaction might positive, not all the vibrios have completely undergone degenerati Some of the cellular bodies showed metamorphosis and the bacte body could not be recognised, yet some of them were still alive.

Tokunaga (1911) made complement-fixation tests with chol immune serum and fæces of cholera patients as antigen. He found chol antigen in 79 per cent of the cholera fæces he examined. Typi cholera fæces give marked reactions, but the fæces of carriers give ne tive results. This experimental method, however, has little practi value.

Yoshino (1912) studied the complement-fixation reaction of norn human, horse and rabbit sera with the extract of cholera vibrio antigen, and found that none of these sera gave positive reactions.

Takano maintained that, as an antigen for the complement-fixati tests, the substance which is extracted in the medium by the organis when they are killed by heating or disinfectants should be used. Uye (1914) reported that the supernatant fluid of the extract obtained boiling cholera vibrios is the strongest antigen. In boiling, the so-call impedin phenomenon is lost and antigenic power strengthened.

Watanabe (1924) reported that, when the volume of the chole vibrios is measured with Torigata's precipitinometer in the bactericic reaction in the test-tube, he found that the volume of the vibrio ma increased at a certain concentration of the serum. According to t author, this is the specific immunological reaction.

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4. Pathology.

There are only a few reports on the pathological changes in human bies. Utsumi (1922) reported on the histological studies of various sera of five cholera cadavers. He found lobular pneumonia in one

case, with hæmorrhagic spots and hyaline-like deposits. In the he there was waxy degeneration. The spleen was not enlarged. In kidneys, degeneration and necrosis of the renal tubules and mor less degeneration of the glomeruli were noticed. The intestines sho marked catarrhal inflammation. The striated muscles had various a phic changes. In the nervous system, the diaphragmatic nerves e cially showed segmentation of the axis cylinders. Living cholera vib were cultivated from the gastric and gall-bladder walls.

Ishiwara (1912) studied the influence of bacterial toxins on ra kidneys. In regard to the action of cholera toxin, he stated that histological changes of the kidney are not marked. There was sli serous exudations in Bowman's capsule, swelling of the epithelial c of the renal tubules, formation of cylindrical casts, congestion of ca laries in the interstitial tissues, occasional cellular hypertrophy in glomeruli, fatty infiltration and dropsy-like degeneration in the epithe cells of the main renal tubules, swelling of the epithelial cells of the *tu laqueiformes*, granular degeneration, fatty infiltration, and perivasc infiltration. But the functional disturbance is very slight.

Yamabayashi (1914) studied the influence of bacterial toxins on rabbit's liver. In regard to the influence of the cholera toxin, he repor that the hepatic cells showed cloudy swelling and the protoplasm undergone granular and necrotic degeneration. There was a tende to hypertrophy of the stellate cells. Changes in the interstitial tis were slight, mainly congestion of capillaries, infiltration of lymph cells around the blood vessels and bile-ducts. These changes were v similar to the changes found in the liver of cholera patients.

Ohta (1924) studied the influence of bacterial toxins on the pregn rabbit's ovaries and uterus, and reported that cholera toxin cau marked hæmorrhagic inflammation and necrosis, the giant cells be greatly increased in number.

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5. Treatment.

Specific Treatment.

The serum-therapy of cholera was at first studied with great hopes f uccess. In 1902, Masuyama injected cholera immune serum pre- ed at the Government Serum Institute into 218 cholera patients and pared the results with 382 cases not so treated. He came to the clusion that the use of cholera immune serum had no influence on course of the illness, except when practiced in the second stage of illness in youth. Kaya (1902) injected cholera immune serum into patients and compared the course of illness with 113 patients not reated. He found that the immune serum had no curative influence a rather bad clinical effect. Fukuhara (1902) injected cholera mune serum into 7 patients of a group of 43. All 7 survived, but out of the 36 who had not been treated with the serum died. For ours following the injection, the majority of the patients enjoyed a ful sleep and voided urine on awaking. The earlier urine is voided, better is the prognosis. He found that an injection of as much as c.c. of the serum at one time in a serious case had no ill effects. The rer the dose of serum, the better was the effect. He stated that ction of the serum always had a good effect.

In 1918, Umemura studied the precipitation of immune bodies in hlera immune serum. When horse, sheep and rabbit immune sera e treated with ammonium sulphate, the agglutinins were precipitated in the serum globulin. At 4.6 to 4.8 saturation, the agglutinins were rely removed. The agglutinins were found with oeglobulin and sido-globulin, but none in the albumin.

Yoshioka and Ueno (1919) maintained that, in order to determine h therapeutic value of cholera serum, random strains of cholera must e be used. They therefore proposed the preparation of a standard m. A standard unit is an amount of serum which completely pro- s a guinea-pig of 250 gm. against ten times the lethal dose of cholera io. One unit of this is mixed with various amounts of the vibrio, ch is to be used for testing and the mixture is incubated for 30 utes at 37° C. Then it is injected intraperitoneally into the guinea- s. The smallest amount of the vibrio which kills all or the majority f he test animals is called the direct lethal limit. In a similar experi- nt, the largest amount of the vibrio which spares the entire or the ority of the test animals is called the indirect survival limit. Having ermined the indirect lethal and survival limits, when a strain is used testing the immune power of a serum, the same value is always tained in spite of the difference in virulence or in strains.

A cholera immune serum is seldom used therapeutically, but it may sed for the treatment of mild cases, for prophylactic purposes where aid effect is required, in the preparation of sensitised vaccine and for gnostic purposes. It is therefore prepared in all institutes where teriological products are made. The method of preparation in the

Government Institute for Infectious Diseases is as follows : material for injection into animals consists of 2 parts of the typical str 1 part of the atypical strain and 1 part of the intermediate strain. 18-hour agar culture is suspended in salt solution in the proportio 10 mgm. in 1 c.c. and then heated at 53° C. for 1 hour. The s amount of carbolised 6-day bouillon culture is added in order to vide the toxin for the injection. Horses are used for the productio immune serum. The injections are usually made intravenously, sometimes subcutaneously, beginning with a dose of 0.01 c.c. The is increased daily and the interval is also lengthened, until finally dose is 30 c.c. injected every 6 to 7 days. The time between the be ning of the injection and the bleeding of the animal is about 40 d To the serum thus obtained is added carbolic acid in the proportio 0.5 per cent to keep it sterile. The titre of the serum is determined agglutination and by its power to protect against infection. The la is tested by injecting a certain amount of the serum with ten times minimum lethal dose (virulence should be over 1/10th mgm.) of a li vibrio into the abdomen of a guinea-pig weighing 200 gm. A se should have protective power in this test with less than 0.0005 c.c. agglutinin titre should be over 5,000 times (dilution).

(b) *Other Methods of Treatment.*

The clinical treatment of cholera is merely symptomatic. The imp tant things to bear in mind are to remove the toxin in the intestines overcome the toxic symptoms, to replace the loss of tissue fluid and support the action of the heart. The general treatment of cholera Japan will be briefly described.

According to Nanno (1915), absolute rest in bed is essential castor oil, calomel or salts may be prescribed. Opium is contra-indicat and the oral administration of disinfectants to prevent the growth cholera vibrios in the intestines is ineffective. In order to wash the vibrio and toxin, a solution of 0.5 % tannic acid warmed to 39° C. 40° C. may be used to irrigate the intestine. In a serious case, morph and pieces of ice may be given to prevent thirst and vomiting. At same time, an ice-bag or a mustard plaster may be placed on the ab men. At times chloroform may be used. The warm, hot or must bath may be given repeatedly to increase the vitality. To supply loss of body fluid, physiological salt solution, a solution of 0.6 % sodi chloride and 0.3 % of sodium carbonate, or Ringer's solution may injected subcutaneously or intravenously repeatedly. Massage and h water bags may be applied to keep up the body temperature. He stimulants may be required and a large amount of liquid should be giv

Murayama found, during the epidemic of 1916, that good effects w obtained by the intravenous or subcutaneous injection of glucose so tion. He experimented with physiological salt solution and 3 glucose in 0.3 % or 0.85 % salt solutions. In very serious cases there w

marked differences. When physiological salt solution was injected n) 74 cases, 52 (70.27 per cent) died; with injections of 3 % glucose in % salt solution, 40 died out of 54 cases (74.07 per cent), and with glucose in 0.85 % salt solution, 22 out of 31 cases died (70.96 per t). But with mild cases the glucose solution had very good effects, ecially during the uræmic period after the algid stage had been sed. Following the injection, the amount of urine increased and the ntal state improved. There was no secondary ill-effect.

Some clinicians maintain that the injection of a hypertonic solution ies good results, but controlled experiments failed to substantiate this. nerally speaking, the injection of salt solution at an early stage is very ctive.

Cantanie's method of tannic-acid irrigation and warm baths is more less effective. Diuretics may by used effectively to prevent the et of uræmia. Potassium permanganate solution had no definite ult.

Shirasaka (1916) recorded his experience in Chosen with 207 patients l 88 carriers. The administration of potassium permanganate (solu- n of 1 in 5,000, 100 c.c. per day) gave fairly good results. The disap- rance of the vibrio from the fæces was comparatively rapid, usually to 37 days. For vomiting, tincture of opium, for disinfection of the estines, salol, and during the convalescent period magnesium sul- ate solution were administered. For muscular cramps, equal amounts tincture of camphor and chloroform were applied, and for hiccough stard plaster was applied to the lower extremities. For the loss body fluid, physiological salt solution may be injected intravenously subcutaneously, but sometimes the absorption is not satisfactory. Rectal injections of physiological salt solution twice or thrice a day often ie better results.

Of the 85 deaths, 44 (51.76 per cent) died on the first day, 11 (12.94 cent) on the second day, 11 (12.94 per cent) on the third day, 8 (9.5 per cent) on the fourth day, 4 (4.7 per cent) on the fifth day, 3 (3.5 cent) on the sixth day, and 2 (2.4 per cent) on the seventh day.

The blood alkalinity of mild cholera cases is about the same as that hormal persons, but in moderate or serious cases it is markedly reduced l results in acidosis. Therefore, in the treatment of cholera, acidosis ould be kept always in mind. Tsurumi (1920) injected sodium bicar- nate solution in 49 cases and the death rate of this series was 28.4 per ut, while that of 480 cases who had been treated with salt solution or mune serum was 42.7 per cent.

Yamamoto (1920) injected intravenously 1 % sodium bicarbonate solution in 47 serious cases, 18 moderate cases and 5 mild cases. The ult was remarkable. Following the injection, various symptoms her improved temporarily or disappeared entirely. By repeating the ection, there were continuous or permanent improvements. Out of 7 cases thus treated there were only 12 deaths (17.14 per cent). Of these, y 2 had been given a sufficient amount of the solution. All the rest re either too old (over 50 years old) or treated too late. Injection

of proper amounts of the sodium bicarbonate solution produces no b effects, therefore intravenous injection is preferable. Moreover, su cutaneous injection of sodium bicarbonate gives more pain than t injection of physiological salt solution, and sometimes necrosis may produced. During the algid stage, the bicarbonate solution in the su cutaneous tissue is absorbed with difficulty. Repeated injections sodium bicarbonate solution not only improve the symptoms but increa the amount of urine excreted and prevent the occurrence of uræmia.

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Chapter X.

CHOLERA EPIDEMICS IN JAPAN.

1. History.

The history of cholera epidemics in Japan is a record of the importation of the cholera vibrio from abroad. Fortunately, cholera is not endemic in Japan. During the summer months the vibrio is imported into the country and causes an epidemic of greater or lesser extent. But with the coming of cold weather it gradually subsides, and instances are very rare of the cholera vibrio living through the winter to become the source of an epidemic the following year. The frequency of cholera epidemics in Japan increased with the development of communication with foreign countries. Since 1877, there have been only five years in which cholera outbreaks did not occur, namely, 1905, 1906, 1915, 1918, and 1924, and only one case was reported in 1904, five cases in 1914, and four cases in 1923. In all other years cholera prevailed to a greater or lesser extent.

The first record of a cholera epidemic in Japan was in 1822, the second in 1858 and the third in 1877. At that time the Central Sanitary Bureau had already been established (1874), and the epidemics since then are completly recorded in the Annual Reports of the Bureau. The records of cholera epidemics before the Restoration are compiled in the *History of Diseases in Japan*, written by Dr. Fujikawa. The volumes on *Cholera Epidemics in Osaka* and *The Centenary of the Cholera Epidemic in Tokyo* also contain old records of cholera epidemics. Iimura reported, at the Fifth Congress of the Far Eastern Association of Tropical Medicine at Singapore, in 1923, on the history of cholera epidemics in Japan. Various prefectures published accounts of cholera epidemics in their respective prefectures. The following is a summary of the epidemics prepared from the materials mentioned above.

The Epidemic of 1822. — The cholera vibrio was brought in by a Dutch merchant-ship sailing from Java to Nagasaki and caused an outbreak there in the early part of August. In the middle of the month it spread to the south end of the mainland and rapidly extended to Osaka, where it took a terrific toll of human life. One or two members of every household were struck down by cholera, and in many instances entire families were wiped out. No accurate statistics are available, but it was estimated that there were tens of thousands of patients in Osaka, Katsurakawa and Ohtsuki. Physicians of the Dutch school diagnosed the disease as true Asiatic cholera.

There was an expedition of the English Army in India in 1817 1823 and war bet ween Persia and Turkeyin 1821. Cholera became pa demic during this period in India and Persia. Cholera visited Java 1820 to 1821; it invaded several regions in China and finally came Japan.

The Epidemic of 1858. — Cholera was reported first in Nagasaki the early part of July, and within a month it reached Tokyo. T epidemic in Tokyo spread with great rapidity, and it was said th during the month of August, thousands of people died every day and a little over fifty days between July and September there were ov 286,000 corpses handled by the churches and crematories. It raged Kyoto and Osaka and in the north as far as Hakodate. The numb of cholera patients in this epidemic must have reached several hundr thousand. With the coming of cold weather the virulence gradual declined, but it flared up the next spring and lasted until the autun of 1860. According to the record of Von Pompe, a Dutch physician Nagasaki, the disease was first brought to Nagasaki from China by t United States war-vessel *Mississippi*. A few cholera cases appear have been reported in 1862 and 1863. Therefore the disease must ha remained in Japan for six years.

The Crimean War was raging in Europe at that time (1853) a cholera had spread along the coast of the Mediterranean Sea, and lat caused a pandemic in that area. As a consequence, the international ch lera congresses were held at Constantinople in 1866 and Vienna in 187

The devastation caused by cholera frightened the people of the enti country, and led the Tokugawa Shogunate to order physicians to stu the disease in the Occidental schools of medicine. Thus the epidem of cholera in one way stimulated the introduction and development Western medicine in Japan.

The Epidemic of 1877. — The Central Sanitary Bureau had alrea been established and attention was paid to the prevalence of cholera foreign countries. When the news of the cholera epidemics in Singapo and Amoy had reached the Bureau, it immediately adopted preventi measures. The Home Department ordered the prefectural governmen at Kanagawa, Nagasaki and Hyogo to establish maritime quarantin Clean-up days were decreed for each household. But the first ca of cholera was reported in Yokohama on September 5th, and a case w found on an English ship in Nagasaki. In the middle of Septembe cholera was reported in Tokyo. After that it spread rapidly all ov the country. The soldiers returning from the civil war in the sout brought the disease with them to Kobe and other provinces. Th Government exerted every effort to check the disease, and quarantir stations were established at various strategic points but the disease kep spreading and reached its height in the early part of October. gradually subsided with the coming of cold weather and completely die out in December. It was reported that there were over 130,000 patient

During this epidemic, strict measures for disinfection were institute carbolic acid being used for that purpose. Isolation hospitals wer

ablished, quarantine officers appointed, and these quarantine measures gadually became effective.

The Epidemic of 1878. — A few sporadic cases had been reported i January from various places. But the virulence was very weak and te death rate low. A fresh strain was imported into Nagasaki in the rly part of October and caused a fairly extensive epidemic in the Ngasaki and Kumamoto prefectures, but it soon subsided.

The Epidemic of 1879. — The source of this epidemic was not known, t probably it resulted from the disease of the previous year. March, a case was reported in Ehime prefecture and the disease spread the Beppu Hot Spring. The return of the visitors from the resort filitated the spread of the disease to all parts of the country. The idemic was most virulent from June to August and it finally ceased the ter part of December. There were 160,000 patients. A physician at te Osaka Isolation Hospital, Tamiya, made several autopsies on cholera davers, but failed to gain much information.

Thus cholera threatened the life of the people, and the Government promulgated the law requiring the report of cases, quarantine, isolation, sinfection and establishment of isolation hospitals. This was the ginning of the present Regulations for the Prevention of Infectious seases. The Central Health Board was organised as an advisory body fr the Home Department. The Marine Quarantine Regulations were so promulgated.

The Epidemic of 1880. — Sporadic cases were reported from various paces. It appeared to be the flare-up of the previous epidemic. The ath rate was somewhat low and the disease did not assume a true epidemic rm. The Regulations for the Prevention of Infectious Diseases were promulgated, and included cholera, typhoid fever, dysentery, diphtheria, phus fever and smallpox.

The Epidemic of 1881. — A cholera patient of unknown origin was ported in Kagoshima in February and a localised epidemic resulted i Kyushu and around Osaka. There were over 9,000 patients.

The Epidemic of 1882. — A few sporadic cases, which did not spread any extent, were reported in Tokyo and Osaka in January, but at e end of February there was an outbreak in Yokohama, which soon tained epidemic proportions and lasted until January 1883. There ere over 50,000 patients. Quarantine regulations applying to foreign ips were promulgated.

The Epidemic of 1883. — There were a few sporadic cases over the ntire country. It appeared to have been a flare-up from the previous ar. The fifth cholera pandemic began this year. Koch came to gypt and discovered the comma bacillus on August 14th. Then he sited Calcutta on December 12th and confirmed the causative agent. 1884, he returned to Germany and reported his discovery on July 26th, 884.

The Epidemic of 1884. — A few sporadic cases were reported in the rly spring, probably a flare-up from the previous year, but the viru- nce was very low. There was a serious epidemic in South China,

and quarantine of ships was strictly enforced. Believing that the w to preven cholera was to guard against the importation of the vibr from abroad, attempts were made to institute strict port-quarantı regulations.

The Epidemic of 1885. — Cholera was devastating South China, a there was a war between China and France. The war-vessels of vario countries came to Nagasaki and the first case was reported there August 22nd, and soon spread all over the Kyushu district. August 31st, the disease was brought into Kobe by an American wa ship which polluted the sea-water. It soon spread all over that distri At about the same time, the disease was carried into Yokohama by English ship and another focus of the epidemic was established. T virulence of the disease was extremely high and the mortality rate ve great. The epidemic in Kyushu extended to the coal-mining distri and the transportation of coal was guarded against as a medium for t spread of the disease.

The comma bacillus reported by Koch in Germany had not as y been isolated in Japan. Dr. Kitasato, then an officer in the Hon Department, went to Nagasaki and confirmed the identity of the comm bacillus by microscopic as well as cultural methods on September 10t Nagai, representing the Japanese Government, attended t Cholera Congress held in Rome on May.

The Epidemic of 1886. — There was a flare-up of the disease in Osak and Nagasaki from the previous year. Since the preceding autum there had been one or more cases reported in Osaka. On January 2n five cases were reported, the next day five more cases, and at the en of April the disease spread all over the city and lasted until Octobe The disease extended over the surrounding country, with Osaka as t centre, and in August there were 2,000 new patients every day. The were 155,000 cases during the year.

The fact that outbreaks of cholera in recent years had been sma and localised had led some to believe in the effect of the pr ventive measures instituted a few years before, but the epidemic of 188 destroyed all illusion as to the efficacy of these measures. The author ties began to believe that the prevention of cholera could only b effected by installations of pure water sulphite, sewerage systems, an disinfection of the soil.

1887 *to* 1889. — There were a few sporadic cases during these thre years. It was found that fumigation with sulfite gas had no effect, an the use of lime water was recommended instead.

The Epidemic of 1890. — The disease was brought into Nagasak from Shanghai in the latter part of June. It spread all over Kyush and Chugoku provinces and invaded Tokyo. The disease was mos virulent in Shimonoseki and Osaka. There were 46,000 patients.

The Epidemic of 1891. — The disease was a flare-up from the previou year, but in August a new strain was brought in which later caused a epidemic with over 11,000 patients. An Imperial ordinance relating t the quarantine of ships was promulgated.

1892 *to* 1894. — There were a few sporadic cases.

The Epidemic of 1895. — There had been war between China and Japan since the previous year and there were cholera cases among the soldiers. In March, the disease was brought from China by an army transport to Moji and Ujina. With the return of the soldiers, the disease showed a tendency to spread rapidly. Thereupon the Home Department established a temporary quarantine bureau and several quarantine stations, and every known means was exerted to prevent the spread. But there were over 55,000 patients.

The epidemic among the Japanese soldiers in the Bokoto Islands near Formosa was the most virulent. The soldiers left Japan on March 15th and reached the island on the 22nd. During the voyage there were cases and after the soldiers had landed the disease became uncontrollable. In the early part of April there were 736 deaths, 444 convalescent cases and 478 patients. With reinforcements of sanitary officers, the disease was finally checked in the middle of April. In this instance, within a period of slightly over 50 days, out of 6,194 soldiers in the expedition, there were 3,292 cases with 1,247 deaths.

Cholera is not endemic in Formosa. In 1895, the disease was imported from Japan, and in 1902 and 1912 from China; in 1916 from the South Seas and in 1919 from China; and the epidemic of 1920 was a flare-up from the previous year.

The foregoing accounts show that an extensive epidemic comes at more or less regular intervals, between which there may or may not be cases of the disease. It still repeats this cycle. The present efficient preventive measures check the disease before it becomes alarming. Since 1895, the years which had over 10,000 cases were 1902 (13,362) and 1917 (10,371).

The following table shows the monthly number of cholera patients for several decades.

MONTHLY DISTRIBUTION OF CASES AND DEATHS FROM CHOLERA IN JAPAN, 1877-1925.

YEAR	JANUARY		FEBRUARY		MARCH	
	PATIENTS	DEATHS	PATIENTS	DEATHS	PATIENTS	DEATHS
1877 . . .						
1878 . . .						
1879 . . .						
1880 . . .	—		2		3	—
1881 . . .	—		1		2	—
1882 . . .	12		—		—	—
1883 . . .	4		—		1	—
1884 . . .	—		—		2	—
1885 . . .						
1886 . . .	108	88	175	126	131	107
1887 . . .			10	7		—
1888 . . .			—	—		—
1889 . . .			4	1		—
1890 . . .	—	—	—	—	—	—
1891 . . .	8	9	—	—	—	—
1892 . . .	5	4	—	1	1	—
1893 . . .	1	—	—	—	2	—
1894 . . .	—	—	—	—	2	2
1895 . . .	2	1	2	2	27	20
1896 . . .	31	22	8	4	—	—
1897 . . .	5	6	2	—	1	1
1898 . . .	—	—	2	1	26	5
1899 . . .	—	—	—	—	2	—
1900 . . .	—	—	—	—	1	1
1901 . . .	—	—	—	—	—	—
1902 . . .	—	—	—	—	—	—
1903 . . .	9	7	3	1	—	—
1904 . . .	—	—	—	—	—	—
1905 . . .	—	—	—	—	—	—
1906 . . .	—	—	—	—	—	—
1907 . . .	—	—	—	—	—	—
1908 . . .	6	2	2	1	—	—
1909 . . .	—	—	—	—	—	—
1910 . . .	—	—	—	—	—	—
1911 . . .	3	1	—	—	—	—
1912 . . .	—	—	—	—	—	—
1913 . . .	38	8	38	14	—	—
1914 . . .	—	—	—	—	—	—
1915 . . .	—	—	—	—	—	—
1916 . . .	—	—	—	—	—	—
1917 . . .	149	78	216	116	16	20
1918 . . .	—	—	—	—	—	—
1919 . . .	—	—	—	—	—	—
1920 . . .	—	—	—	—	—	—
1921 . . .	—	—	—	—	2	2
1922 . . .	—	—	—	—	—	—
1923 . . .	—	—	—	—	—	—
1924 . . .	—	—	—	—	—	—
1925 . . .	—	—	—	—	—	—
1926 . . .						
1927 . . .						

MONTHLY DISTRIBUTION OF CASES AND DEATHS FROM CHOLERA IN JAPAN, 1877-1925 (*Continued*).

YEAR	APRIL		MAY		JUNE	
	PATIENTS	DEATHS	PATIENTS	DEATHS	PATIENTS	DEATHS
77 . . .						
78 . . .						
79 . . .						
80 . . .	5		41		141	
81 . . .	2		10		55	
82 . . .	7		191		1,388	
83 . . .	—		6		45	
84 . . .	—		7		72	
85 . . .						
86 . . .	407	286	4,840	3,614	8,254	6,575
87 . . .			273	111		
88 . . .			54	28		
89 . . .			41	26		
90 . . .	2	2	4	2	58	38
91 . . .	3	3	9	3	67	37
92 . . .	—	—	8	5	52	32
93 . . .	2	1	2	1	30	13
94 . . .	1	—	10	3	90	51
95 . . .	159	117	542	396	2,558	1,782
96 . . .	3	1	5	4	199	52
97 . . .	1	—	3	—	48	22
98 . . .	16	4	22	5	27	15
99 . . .	1	—	12	4	83	53
00 . . .	4	2	4	3	19	11
01 . . .	—	—	1	1	—	—
02 . . .	—	—	—	—	69	40
03 . . .	—	—	—	—	4	1
04 . . .	1	1	—	—	—	—
05 . . .	—	—	—	—	—	—
06 . . .	—	—	—	—	—	—
07 . . .	—	—	—	—	—	—
08 . . .	4	1	—	—	1	—
09 . . .	—	—	—	—	—	—
10 . . .	—	—	—	—	—	—
11 . . .	—	—	—	—	—	—
12 . . .	—	—	—	—	—	—
13 . . .	—	—	—	—	—	—
14 . . .	—	—	—	—	—	—
15 . . .	—	—	—	—	—	—
16 . . .	—	—	—	—	—	—
17 . . .	4	1	—	—	—	—
18 . . .	—	—	—	—	—	—
19 . . .	—	—	—	—	—	—
20 . . .	—	—	—	—	487	276
21 . . .	—	—	—	—	2	2
22 . . .	—	—	—	—	—	—
23 . . .	—	—	—	—	—	—
24 . . .	—	—	—	—	—	—
25 . . .	—	—	—	—	—	—
26 . . .						
27 . . .						

MONTHLY DISTRIBUTION OF CASES AND DEATHS FROM CHOLERA IN JAPAN, 1877-1925 (*Continued*).

YEAR	JULY		AUGUST		SEPTEMBER	
	PATIENTS	DEATHS	PATIENTS	DEATHS	PATIENTS	DEATHS
1877 . . .						
1878 . . .						
1879 . . .						
1880 . . .	403		332		136	
1881 . . .	301		560		2,180	
1882 . . .	9,041		25,637		12,412	
1883 . . .	312		382		141	
1884 . . .	313		305		160	
1885 . . .						
1886 . . .	21,071	14,624	57,687	37,650	44,598	31,552
1887 . . .			864	485		
1888 . . .			708	409		
1889 . . .			665	380		
1890 . . .	2,367	1,494	11,081	7,830	21,466	16,589
1891 . . .	430	233	628	356	3,342	1,979
1892 . . .	306	189	289	140	162	100
1893 . . .	177	106	231	136	133	73
1894 . . .	194	100	123	74	50	30
1895 . . .	8,057	5,632	23,172	16,533	14,094	10,439
1896 . . .	351	203	414	224	188	95
1897 . . .	198	109	405	221	183	92
1898 . . .	198	123	197	119	108	65
1899 . . .	320	181	291	176	80	48
1900 . . .	75	43	185	120	76	41
1901 . . .	21	16	56	33	20	13
1902 . . .	496	309	4,582	2,887	5,803	3,807
1903 . . .	3	2	13	8	1	—
1904 . . .	—	—	—	—	—	—
1905 . . .	—	—	—	—	—	—
1906 . . .	—	—	—	—	—	—
1907 . . .	—	—	504	434	1,399	814
1908 . . .	—	—	16	11	125	74
1909 . . .	—	—	1	1	6	3
1910 . . .	—	—	—	—	217	123
1911 . . .	—	—	5	2	1	1
1912 . . .	82	24	26	12	903	559
1913 . . .	—	—	2	—	—	—
1914 . . .	—	—	—	—	4	3
1915 . . .	—	—	—	—	—	—
1916 . . .	—	—	1,305	631	5,841	3,238
1917 . . .	—	—	46	32	327	201
1918 . . .	—	—	—	—	—	—
1919 . . .	—	—	61	24	660	204
1920 . . .	1,880	1,127	1,441	946	874	556
1921 . . .	—	—	—	—	—	—
1922 . . .	—	—	—	—	214	111
1923 . . .	—	—	—	—	—	—
1924 . . .	—	—	—	—	—	—
1925 . . .	—	—	4	2	297	144
1926 . . .						
1927 . . .						

MONTHLY DISTRIBUTION OF CASES AND DEATHS FROM CHOLERA IN JAPAN, 1877-1925 (*Continued*).

YEAR	OCTOBER		NOVEMBER		DECEMBER	
	PATIENTS	DEATHS	PATIENTS	DEATHS	PATIENTS	DEATHS
77 . . .						
78 . . .						
79 . . .						
80 . . .	41		9		3	
81 . . .	4,530		847		56	
82 . . .	2,610		312		21	
83 . . .	57		12		2	
84 . . .	38		3		—	
85 . . .						
86 . . .	14,814	12,625	1,992	1,736	180	111
87 . . .			81	51		
88 . . .			49	23		
89 . . .			41	24		
90 . . .	9,869	8,297	1,058	877	114	98
91 . . .	4,776	3,531	1,674	1,456	205	153
92 . . .	43	21	8	4	—	1
93 . . .	50	32	5	2	—	—
94 . . .	29	17	29	20	18	17
95 . . .	5,801	4,577	693	623	37	32
96 . . .	250	178	109	99	23	26
97 . . .	39	32	9	5	—	—
98 . . .	49	30	10	7	—	—
99 . . .	36	19	3	5	1	1
00 . . .	11	7	2	2	1	1
01 . . .	3	3	—	1	—	—
02 . . .	2,094	1,853	260	280	58	50
03 . . .	57	23	87	49	—	—
04 . . .	—	—	—	—	—	—
05 . . .	—	—	—	—	—	—
06 . . .	—	—	—	—	—	—
07 . . .	1,039	796	569	387	121	95
08 . . .	240	147	254	161	4	4
09 . . .	294	191	27	26	—	—
10 . . .	2,121	1,377	467	412	44	45
11 . . .	—	—	—	—	—	—
12 . . .	972	597	623	397	114	94
13 . . .	—	—	—	—	—	—
14 . . .	1	1	—	—	—	—
15 . . .	—	—	—	—	—	—
16 . . .	2,567	1,810	546	471	112	110
17 . . .	121	81	15	12	—	—
18 . . .	—	—	—	—	—	—
19 . . .	1,752	538	429	143	10	6
20 . . .	281	192	20	22	2	2
21 . . .	25	12	—	—	—	—
22 . . .	525	311	4	5	—	—
23 . . .	—	—	4	2	—	—
24 . . .	—	—	—	—	—	—
25 . . .	226	167	67	48	30	21
26 . . .						
27 . . .						

MONTHLY DISTRIBUTION OF CASES AND DEATHS FROM CHOLERA IN JAPAN, 1877-1925 (*Continued*).

YEAR	TOTAL		
	PATIENTS	DEATHS	FATALITY RATE
1877.	13,710	7,967	58.11
1878.	1,008	301	29.86
1879.	162,637	105,786	65.04
1880.	1,580	618	39.11
1881.	9,328	6,197	66.43
1882.	51,631	33,784	65.43
1883.	969	434	44.79
1884.	900	415	46.13
1885.	13,772	9,310	67.48
1886.	155,923	108,405	69.25
1887.	1,228	654	53.26
1888.	811	460	56.72
1889.	751	431	57.39
1890.	46,019	35,227	76.55
1891.	11,142	7,760	69.65
1892.	874	497	56.86
1893	633	364	57.50
1894.	546	314	57.51
1895.	55,144	40,154	72.82
1896.	1,481	908	61.31
1897.	894	488	54.59
1898.	655	374	57.10
1899.	829	487	58.50
1900.	378	231	71.11
1901.	101	67	66.34
1902.	13,362	9,226	69.05
1903.	177	91	51.41
1904.	1	1	100.00
1905.	—	—	—
1906.	—	—	—
1907.	3,632	2,526	69.54
1908.	652	401	61.50
1909.	328	221	67.38
1910.	2,849	1,957	68.69
1911.	9	4	44.44
1912.	2,720	1,683	61.88
1913.	78	22	28.21
1914.	5	4	80.00
1915.	—	—	—
1916.	10,371	6,260	60.36
1917.	894	541	60.51
1918.	—	—	—
1919.	2,912	915	31.42
1920.	4,985	3,121	62.61
1921.	29	16	55.17
1922.	743	427	57.47
1923.	4	2	50.00
1924.	—	—	—
1925.	624	382	61.22
1926.			
1927.			

The following table relates to the more extensive epidemics and the nber of cases ineach.

Yr.	Patients.	Deaths.	Mortality Rate. Per cent
8[illegible]	About 50,000	Unknown	—
83	Several hundred thousand	Unknown	—
87	13,710	7,967	58.11
8[illegible]	162,637	105,786	65.04
8[illegible]	51,631	33,784	65.43
8[illegible]	13,772	9,310	67.48
8[illegible]	155,923	108,405	69.27
80	46,015	35,227	76.55
8[illegible]	11,142	7,760	69.65
8[illegible]	55,144	40,154	72.82
90	13,362	9,226	69.05
9[illegible]	10,371	6,260	60.36

n recent years the most serious epidemic occurred in 1920. Even it the total number of patients was only 4,985. Cholera was imported ot time to time, but the disease has always been controlled before it ched epidemic proportions. This is largely due to the application of n ediate and efficient preventive measures.

2. Epidemiology.

The foregoing account of the epidemics of cholera shows that cholera ot native to Japan. The disease is imported from foreign countries n subsides with the coming of cold weather. The continuation of tdisease over the winter is very rare. Even when it does in excep- o al cases, the virulence is greatly reduced and cases occur only spora- dlly. When the disease is imported afresh, an epidemic occurs. h efore, the characteristic of cholera epidemics in Japan is that they realmost always limited to the summer months.

a) Duration of Epidemics.

During the year following the epidemic of 1877 there were only a sporadic cases. The great epidemic of 1879 might be suspected causing the flare-up of 1880. Even this epidemic subsided it the coming of autumn. There was no epidemic the following es. The epidemic of 1882 might also be suspected of causing the r-up of the succeeding year. It, however, subsided within the year, n in the following year there were only a few sporadic cases. There a great epidemic in 1885 and 1886. The disease was brought in from h a in 1885; it did not die out altogether during the winter and caused tepidemic of 1886. The epidemics of 1890 and 1891 were more or s extensive. The disease was imported in 1890 and the following e it was again imported. Therefore the epidemic, which continued ost continuously for two years, should be considered as two separate

epidemics caused by different importations. The epidemics of 1902 and 1916 were caused by cases imported during each of those y

All other epidemics were caused by cases imported during the or the latter part of the previous year (1879, 1882). It appears the cholera vibrio in Japan is influenced by the climate and soil and its virulence, so that it no longer is capable of causing an epidemic. spite of the fact that, during the epidemics in 1822 or 1858, there no application of preventive measures, yet in each case the epid ceased of itself within the year. This is concrete proof that acclimat of the disease in Japan is impossible and the disease gradually lose virulence.

(b) *Fatality Rate.*

The fatality rate of cholera ordinarily is from 60 to 70 per Sometimes it is over 70 per cent. In Japan there have been not a instances of rates as low as 50 to 60 per cent, and rates below 50 cent are seen in a few instances. The rate is highest when the dis is newly imported. The fatality rate of a year in which there are a few sporadic cases following an epidemic is rather low.

(c) *Relation of Seasons to Cholera.*

The past records show that the disease is most frequently impo in the months of August and September and these are the month which epidemics reach their peaks. The epidemic begins to sub gradually in October and November and practically ceases in Decem Even when the disease breaks out in the early part of the following y the rapid increase of the patients is in the summer. Its effect, howe may be extended to the winter or even to the spring. During the months the disease is easily disseminated widely. This is due to fact that the growth of the cholera vibrio is only possible during summer months. Other diseases of the digestive tract, such as typ fever, occur even in the winter in Japan, yet it is a characteristi cholera to have weakened virulence in the winter months.

It is true that a few cases of cholera may be reported in the se months of winter. Cases frequently may be reported in January February when the outbreak occurred in the late season of the prev year. These cases are always sporadic. But during the epidemic of 1 and 1917, over 100 patients were reported during the winter month

(d) *Persistence of the Cholera Vibrio over the Winter.*

The existence of winter cholera in Japan indicates that the cho vibrio is able to survive the winter. But it is very rare that the cho vibrio becomes the source of another epidemic after surviving the col weather of February. No such instance has occurred since 1900. Th is hardly any fear of cholera becoming acclimatised in Japan. I records show that the disease imported into Japan dies out after

demic during the summer month even if it is left alone, and the virulence of the vibrio becomes so low after passing over the winter that it only becomes innocuous. Had there been no cholera in the surrounding countries, Japan would never have been attacked by the disease.

Cholera in Japan and Abroad.

We have shown that the important epidemics in the past have been caused on each occasion by the importation of the disease. The incidence of cholera in various places in the Orient as reported by Dr. Conan White is as follows :

Deaths from Cholera.

Port or Country.	1918.	1919.	1920.	1921.	1922.
Colombo	4	—	—	—	—
Bombay	1,682	8,455	29	70	15
Bombay district. . . .	8,834	51,551	2,047	3,521	?
Calcutta	1,526	3,688	2,302	1,997	1,269
Bengal	82,379	124,949	54,199	80,547	5,172
Rangoon	74	233	61	101	264
Burma	4,269	13,260	3,369	3,791	5,047
Siam	42	1,027	2,748	40	
French Indo-China. . .	1,456	4,798	1,035	2,838	?
Bangkok	123	399	3	23	23
Philippine Islands . . .	4,702	18,414	1,387	76	88
Java	9,864	8,861	17	1	28
Singapore.	—	58	32	1	1
Malay States Federation.	233	237	14	—	—
Hong-Kong	—	46	6	5	1
Shanghai.	—	680	144	122	101
Nagasaki	1	2,695	1,675	—	—
Japan	—	915	3,121	16	417
Korea	—	11,084	13,568	1	23
Kwantung Province . .	—	6,300	Epidemic	—	—

Dr. White reported that cholera is endemic in India, in Burma, Siam, Indo-China, and almost endemic in the Philippine Islands and the Dutch East Indes. Cholera is endemic in the region between 10° to 30° longitude. It is interesting to note that it has been endemic for several centuries in this region. Cholera is not an endemic disease in Japan. Shanghai has been the most dangerous port for Japan. Whenever there is cholera in Shanghai, Japan is threatened.

Dr. White observed that cholera in Japan has been imported from abroad at each epidemic. This is particularly true since 1900. Since a year no epidemic has been caused by the persistence of cases over the winter.

The Epidemic of 1912. — The first case occurred on August 29th on a coal transport-ship in a port in Nagasaki prefecture. It spread in

Kyushu and, through the Inland Sea, finally reached Tokyo and
hama. The number of patients was 2,700. Cholera had been
lent in Shanghai since May and in Japan there had been no chole
the previous September, but at the marine quarantine stations at
saki, Kuchinotsu and Miike 6 cholera cases had been found on
coming from Shanghai. Shanghai was designated as an infecte
on August 26th and strict measures were instituted. But the
of the disease was not checked and the first case was reported on
29th. Up to September 16th, the marine quarantine stations fo
cholera and 13 vibrio carriers on the ships coming from China.
shows how much danger of importation exists.

The Epidemic of 1916. — On July 26th, a case of cholera was
on the ship *Hawaimaru* at Yokohama. Just at the time the hea
prevented any communication with the land. Meanwhile the d
spread on the ship and the Yokohama harbour became polluted.
Hawaimaru left Manila, where cholera was very prevalent at the
and touched at Formosa, Nagasaki and Kobe, reaching Yokohama 1
later. The ports (except Manila) at which the ship touched h
cholera at that time, therefore the disease must have been take n
ship at Manila. The patients on the ship at Yokohama (44 case
3 carriers) could not be taken into the quarantine hospital on ac
of the weather. The polluted sea-water spread the disease wid
the city and vicinity and many cases were reported. In the K
provinces the disease was imported from China independently.

The Epidemic of 1919. — There was a violent epidemic in China
up to September 18th the quarantine stations at Moji, Yokohama,
saki and Kobe discovered 17 patients and 29 carriers on ships.
this was going on, the disease broke out in Okinawa and Kyushu.
is no doubt that the disease was brought in from China. The d
in Okinawa must have been introduced from Formosa and in K
from Dairen, Manchuria. For the past 21 months there had be
cholera in Japan.

The Epidemic of 1920. — Since January, there had been epid
of cholera in the Philippines, Bangkok, Calcutta, Amoy and For
The first case was reported in Kobe on a small ship about the mid
June. Thi soutbreak in Kobe must have been due to importation
disease from some of the places mentioned above, for it had been se
months since the last case of the previous epidemic in Japan had
reported.

The Epidemic of 1922. — There were epidemics in Shanghai, M
Bombay and Rangoon during the summer. The disease broke
suddenly in Fukuoka and was soon carried back to Ghoshi, near T
by fishing-boats, and spread to Chiba and Tokyo. Since there had
no cholera until the outbreak in Fukuoka, the disease must have
imported from Shanghai or some southern countries.

The Epidemic of 1925. — Cholera was prevalent in Shanghai
the port of Nagasaki was strictly guarded, but the disease penet
to Nagasaki and gradually spread to Yokohama and other places.

It is obvious that the most important preventive measure in Japan marine quarantine. Epidemics in foreign ports are closely watched l, when necessity arises, fæcal examinations of the passengers and ws of the ships coming from the infected places are instituted in order llocate the patients and carriers.

Preventive Measures.

Suppression of Importation of Cholera. — The Japanese consular vices in the Oriental ports report on cholera epidemics in these ports. reover, at such strategic ports as Shanghai, Hong-Kong and Manila itary officers are stationed to obtain detailed information in regard infectious diseases. Permanent marine quarantine stations are estab-ied at Nagasaki, Moji, Kobe, Osaka, Yokohama and Tsuruga, and nch stations are found in Miike and Kuchinotsu. One to several dical officers are stationed at each. The following ports have tempo-y marine quarantine stations: Kagoshima, Karatsu, Yokkaichi, Nagoya, d Hakodate. Each station is provided with detention-rooms, disin-tion plants and an isolation hospital. When cholera epidemics in tain ports of neighbouring countries threaten Japan, those ports are signated as infected. All ships hailing from such ports are detained the harbour entry for five days (including of the time of the yage), and tests of the fæces from the passengers and crew are made. carrying out these texts, care is taken not to cause unnecessary hind-ance to trade and communications. Unless absolutely necessary, the ssengers and crew are not detained after the fæces have been collected. e bacteriological examinations are completed while they are proceed-ig to their next port of call. The fæces are cultured in peptone water f eight to ten hours, films are made from the supernatant fluid for croscopic examination, and suspected samples are planted on agar dia and tested for agglutination and by Pfeiffer's test.

The number of fæcal examinations made by the Moji marine quarantine station as reported by Iimura is as follows :

Duration.	Fæcal Examinations.	Cholera Cases.	Carriers.
1919 : July 7 — Dec. 24. . .	120,637	8	11
1920 : Aug. 13 — Oct. 29. . .	59,687	4	5
1921 : Aug. 15 — Oct. 29. . .	8,091	1	2
1922 : Aug. 1 — Oct. 25 . . .	11,578	1	1

The following table shows some of the work of the marine quarantine stations :

Year.	*Ships Quarantined :* Japanese.	Foreign.	Crews.	Passengers.
1913. . . .	6,373	2,951	697,661	490,800
1914. . . .	6,783	2,532	661,568	445,703
1915. . . .	7,605	1,616	587,775	440,674
1916. . . .	8,365	1,831	638,404	465,076
1917. . . .	8,468	1,500	640,739	667,718

Year.	*Ships Quarantined:* Japanese.	Foreign.	Crews.	Passenge
1918. . . .	974	1,180	627,949	639,5
1919. . . .	11,182	1,619	743,427	717,7
1920. . . .	9,933	2,176	792,775	846,4
1921. . . .	10,628	1,928	806,192	780,3
1922. . . .	11,043	2,551	909,409	804,3
1923. . . .	10,564	2,170	839,412	762,6
1924. . . .	13,156	3,411	1,080,248	875,7
1925. . . .	14,169	2,852	1,134,053	844,7

Year.	*Désinfected:* Ships.	Persons.	*Discveored:* Cholera Cases.	Carriers.	Ships dest
1913. . . .	7	1,980	10	—	1
1914. . . .	13	6,894	—	—	2
1915. . . .	274	6,816	—	—	—
1916. . . .	100	6,996	51	5	41
1917. . . .	201	86,427	—	—	79
1918. . . .	22	3,125	—	—	17
1919. . . .	1,123	9,409	35	6	1,389
1920. . . .	381	1,247	15	1	109
1921. . . .	171	1,781	3	1	169
1922. . . .	207	799	1	3	204
1923. . . .	253	1,836	—	—	233
1924. . . .	10	340	—	—	6
1925. . . .	199	533	—	—	16

It is not seldom that cholera vibrios are found by means of fa examinations. It is therefore plain that bacteriological examinati of persons on ships coming from the cholera-infected ports should be m and the resulting inconveniences and discomforts must be borne.

Pollution of Sea-water. — Cholera patients and carriers not o spread the disease on land and in ports but they pollute the sea-wat It has been very frequently proved during epidemics that cholera polluted water reaches human beings either directly or indirectly throu fish. Therefore it is important to guard against throwing the infect materials into the sea from ships, and to close up the ships' toilet pip

(g) *Routes of Spread of the Cholera Vibrio.*

The spread of cholera is closely related to the geographical featu and living conditions of the people. Cholera in Japan has always be thought to be due to the pollution of sea-water by ships from abroad a by carriers and cholera patients landed in Japan. The improvemer in preventive measures in recent years facilitate the early detectic diagnosis, isolation and disinfection of cholera patients. Therefore, on occasionally do patients on land infect persons with whom they cor in contact. The quarantine on land is almost complete. When chole breaks out in a port it spreads along the coast, and it is very rare to s the disease carried into provinces far from the coast. Thus cholera

an is spread directly or indirectly by polluted sea-water. The long editions of fishing-boats in recent years facilitate the spread of the ase. The cholera epidemic of 1925 is shown as an illustration of e facts (see map on following page).

yo-fu	81	Yamanashi . . .		Hiroshima. . . .	49
to-fu	7	Shiga.		Yamaguchi . . .	2
ka-fu	53	Gifu		Wakayama . . .	19
agawa. . . .	96	Nagano.		Tokushima . . .	2
go	124	Miyagi		Kagawa.	3
asaki.	13	Fukushima . . .		Ehime.	48
ata		Iwate.		Kochi.	15
ama.	4	Aomori		Fukuoka.	1
ma.		Yamagata. . . .		Oita.	
aki		Akita.		Saga	
a.	46	Fukui.		Kumamoto	
chigi	1	Ishikawa		Miyagi	1
a		Toyama.		Kagoshima . . .	4
ie	19	Tottori	2	Okinawa.	
ii.		Shimane.		Hokkaido	
huoka	7	Okayama	20	Total	617

When the cholera vibrio is thrown into sea-water, it has been experitally proved that it survives for a certain period. Cholera is found many cases among fishermen or those living on boats, and people infected by eating fish or shells taken from polluted sea-water. All e facts indicate the importance of adopting measures to deal with sea-water. It is, however, a very difficult problem to prevent pollution ea-water and to disinfect it. The measures adopted at present are hibition of the use of sea-water or of fishing in certain areas. On the r hand, injection of vaccines for those who are living on boats and sical examinations are strictly enforced. In fishing or transporting s over the sea, precautions must be taken so that the supply of fish ot infected.

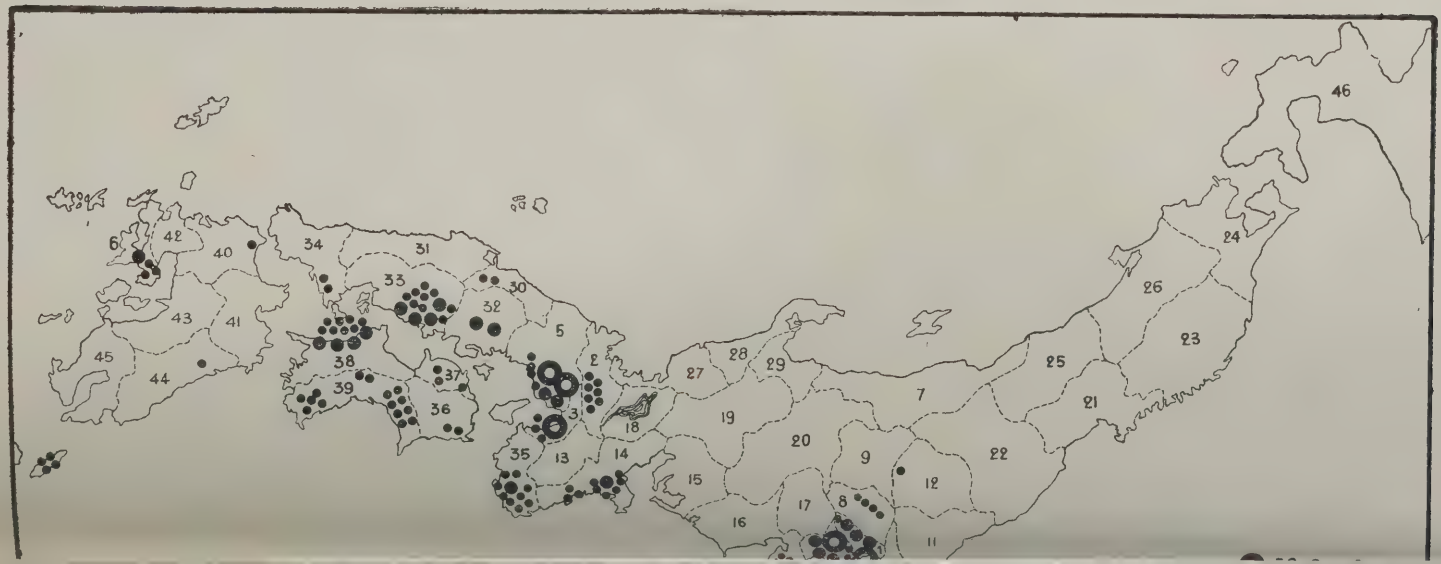
An example of an explosive epidemic caused by fish is that of October 2 in Tokyo. At first, there were a few severe diarrhœa cases in Choshi our, about 60 miles from Tokyo, and, before they were diagnosed holera, cargoes of infected fish had been sent to the Tokyo fishket and distributed to various fish merchants all over the city. As a lt, cholera cases were suddenly reported from all parts of the city.

	Sept. 30	Oct. 1	2	3	4	5	6	7	8
orts.	10	29	29	27	28	10	12	10	5
e Cholera Cases . .	0	2	16	24	23	19	24	19	20
iers	0	0	0	0	4	7	14	11	12

	9	10	11	12	13	14	15	Later.	Total.
orts.	5	5	4	3	2	1	1	3	184
e Cholera Cases . .	13	8	3	2	3	2	3	3	184
iers.	11	6	5	1	3	4	2	3	83

DISTRIBUTION OF CHOLERA IN JAPAN

1. Tokyo.
2. Kyoto.
3. Osaka.
4. Kanagawa.
5. Hiogo.
6. Nagasaki.
7. Nigata.
8. Siatama.
9. Guma.
10. Tshiba.
11. Ibaraki.
12. Tochiki.
13. Nara.
14. Miye.
15. Ahichi.
16. Sisoka.
17. Yamanashi.
18. Shiga.
19. Gifu.
20. Nagano.
21. Miyagi.
22. Fukushima.
23. Iwate.
24. Aomori.
25. Yamagata.
26. Akita.
27. Fukui.
28. Ishikawa.
29. Toyama.
30. Tottori.
31. Shimane.
32. Okayama.
33. Hiroshima.
34. Yamaguchi.
35. Wakayama.
36. Tokushima.
37. Kagawa.
38. Ehime.
39. Kochi.
40. Fukuoka.
41. Oita.
42. Saga.
43. Kumamoto.
44. Mayazaki.
45. Kagoshima.
46. Hokkaido.



Hence after 2 cases were reported on October 2nd, nearly 30 cases w'e reported in the city daily. But the preventive measures were so ɛctive that the spread of the disease was not rapid. Only 9.8 per cent ɔ he total number can be regarded as familial infection and only 0.5 per ɔt were due to contact. It was forbidden to bring fish into the city i n the Choshi district, and other measures of prevention were imme- dtely taken, so that the epidemic was completely checked within two w'ks. No cholera vibrios were recovered from fish, but the distribu- ti n of the cases and careful investigation of each case indicate that rst of them had been infected by eating fish.

Cholera may be spread by streams and wells. When the use of sea- wter is prohibited, the boatmen have recourse to streams and sometimes b ome stricken with cholera. The pollution of the stream spreads the d ease along its course. During the epidemic of 1922, in the city of Fkuoka, a certain district where the population had been supplied wh water taken from the river which runs through the city had 150 c es of cholera within a very short period (Takagi). This can be traced t the polluted river-water which had been supplied to the people b ore it was sufficiently purified.

There was a very interesting instance which showed that well-water h d been the medium for the spread of the disease. Inouye investigated itn Chiba prefecture. He found that 6 cases of cholera occurred around a well. The first case, A, was a sailor in Yokohama and, on returning t his native village, he became sick on September 2nd and died on the n xt day. It was determined to be cholera on the 4th day. The well w ich the case A had used was prohibited for use on the evening of the 3 l. The 2nd case, B, the 3rd case, C, and the 5th case, E, had no con- t ct with case A. They had only used the well-water which case A h d used. The 4th case went to the home of the 1st case, A, on the a ernoon of the 3rd and drank cold tea, which was prepared with water t ken from the well. The 6th case, F, also used the well-water. This c se had dined with case A before the latter became sick, but this could n t be regarded as a means of infection. The following table shows th time relation of the onset of each case :

Cases.	Onset.	Suspected.	Determined.	Death.
A	2.IX	3.IX	4.IX	3.IX
B.	5.IX	5.IX	7.IX	5.IX
C.	5.IX	5.IX	7.IX	6.IX
D	5.IX	5.IX	7.IX	6.IX
E	5.IX	6.IX	7.IX	9.IX
F.	7.IX	7.IX	8.IX	8.IX

The well-water must have been polluted after the evening of the 2nd, a d the use of the well was prohibited on the afternoon of the 3rd. There- f re the infection of the cases must have taken place during the 3rd c y.

The disposal of urine and fæces in Japan is not satisfactory. Fr night-soil is often scattered over fields and vegetable gardens. T vegetables grown on such fields are pickled for a short time and th eaten. There is a danger of spreading cholera by this means. T cholera vibrio dies out very quickly in fæces during the hot sumn months. Therefore direct danger from this source is very small in t summer. But cholera in sewage survives for a comparatively long tin Therefore it is absolutely necessary to disinfect the sewage during chol epidemics. A part of the Tokyo sewer system carries fæcal mat and at the outlet of the disposal plant chlorine is used for disinfecti

Cholera vibrio carriers are also sources of the disease. But in Jap when a cholera patient is reported, all contacts, including those imm diately surrounding the home of the patient, are quarantined and fæ examinations are made. The majority of the carriers, therefore, a detected and prevented from becoming sources of the disease.

(h) *Domestic Quarantine Measures.*

Suspected cases are reported in the same way as true cholera cas The public health officer immediately collects samples for microscopic examination. On the occurrence of a cholera case, the village, town city officers, policemen and medical officers inspect the patient's hon and the patient is immediately taken to the isolation hospital. Then th patient's house, well and other necessary places are disinfected thoroughl The persons in the same house with the patient and immediate neig bours are quarantined in their own homes or in quarantine stations f a specified period. The possible routes of the infection are carefu traced, and swimming and fishing in dangerous waters are prohibite The determination of cholera is made by the demonstration of chole vibrios. Healthy carriers are handled the same way as patients. Hen the spread of the disease from the discovered patients and carriers minimised.

One of the most important of all the preventive measures is th bacteriological examination. There has been great improvement in thi and at present the diagnosis of cholera can be made within a very shor time. The number of such bacteriological examinations made durin the past several years is shown in the following table :

Year.	Potients.	Carriers.	Per cent of Carriers.	Fæcal Examinations.	Carriers per 1000 Exan
1912.	2,798	583	20.8	260,201	2.24
1916.	11,265	3,319	29.4	1,141,558	2.91
1919.	2,912	81	2.7		
1920.	4,967	711	14.3	771,110	0.92
1922.	939	294	31.3		
1925.	624	224	35.9		

In order to show the volume of bacteriological examinations during

lemics, the number of such examinations other than for the diagnosis patients is shown in the following table :

icles Examined.	1912. Examined.	1912. Positive.	1912. Per cent.	1916. Examined.	1916. Positive.	1916. Per cent.
vies	23,343	33	0.42	896	13	1.45
nitus. . . .	37	10	27.0	162	33	21.6
ter	613	14	2.28	136	7	5.15
h, etc . . .	178	0	0	1,332	8	0.6

The following table shows the number of days the cholera patients tinue excreting the vibrio (Iimura) :

ays.	1912-13	1916-17.	1920.	1921.	Total.	Per cent.
s	—	—	—	—	4	0.06
rl	5	38	2	—	45	0.66
r	5	29	2	—	36	0.53
t	9	55	3	—	67	0.99
t	12	74	8	—	94	1.38
t	35	118	27	—	180	2.65
t	40	156	31	—	227	3.34
Totals . . .	106	473	73	—	653	9.61
t	32	169	45	1	247	3.64
t	39	193	85	—	317	4.67
ch.	35	194	89	—	318	4.68
ih.	53	227	104	—	384	5.65
ih.	39	217	110	—	366	5.39
ih.	56	231	107	—	394	5.80
ih.	52	220	110	1	383	5.64
Totals. . . .	306	1,451	650	2	2,409	35.46
ih.	51	206	103	—	360	5.311
ch.	56	168	96	—	320	4.71
ih.	55	176	881	—	319	4.70
ih.	38	180	93	—	311	4.58
ch.	32	159	86	—	277	4.08
ch.	41	139	71	—	252	3.69
lt.	37	116	48	—	201	2.96
Totals . . .	310	1,144	585	—	2,039	30.03
ad.	18	111	47	—	176	2.59
d.	23	86	50	1	160	2.36
ih.	25	80	43	—	148	2.18
ih.	9	73	47	—	129	1.90
ih.	20	67	28	1	116	1.71
ih.	13	42	35	2	92	1.35
ih.	11	33	30	—	74	1.09
Totals . . .	119	280	280	4	895	13.17

Days.	1912-13.	1916-17.	1920	1921.	Total.	Per cen
29th-35th . . .	50	209	161	4	420	6.2
36th-42nd . . .	14	116	54	2	186	2.7
43rd-49th . . .	7	64	29	1	101	1.4
50th-56th . . .	2	26	15	—	43	0.6
57th-63rd. . . .	—	12	7	—	19	0.2
64th-70th . . .	—	3	5	—	8	0.1
71st-77th. . . .	1	1	4	—	6	0.0
78th-151st . . .	—	7	—	—	7	0.1
Totals . . .	915	3,999	1,863	13	6,790	100.0
Incompletely observed . .	1,883	7,266	3,104	16	12,269	
Grand Totals .	2,798	11,265	4,967	29	19,059	

Again, the number of days the carriers continue excreting cholera vibrio is shown in the following table (Iimura) :

Days.	1912-13.	1916-17.	1920.	1921.	Total.	Per cen
1st-7th	350	1.618	279	—	2,147	47.5
8th-14th. . . .	246	1.067	291	1	1,606	35.5
15th-21st . . .	59	357	97	—	513	11.3
22nd-28th . . .	6	112	34	—	152	3.3
29th-35th . . .	8	51	3	—	62	1.3
36th-42nd . . .	1	18	1	—	20	0.4
43rd-89th . . .	1	7	3	—	11	0.2
Totals . . .	671	3,230	708	2	4,511	100.0
Unknown . . .	13	79	3	—	104	
Grand Totals.	683	3,309	711	2	4,615	

Detection of carriers and the appropriate measures to deal with th are the important factors in an effective campaign against cholera.

As soon as there is an outbreak, preventive inoculation is enco aged. Its effect is believed in by the general public, so that they vol teer for inoculation. The exact number of inoculated persons is diffi to ascertain, but, according to Iimura, there were, in 1916, over 1,000, (1 injection, 1,002,116; 2 injections, 412,645; 3 injections, 64,708), in 1919 over 3,000,000 (1 injection, 3,033,481; 2 injections, 2,176,4 3 injections, 34,177).

Preventive inoculation is carried out extensively. When it appe necessary, compulsory inoculations are carried out at the fish-mark and on fish merchants, fishermen, sailors and boatmen. Fæcal exa nations are made when necessity arises. In such cases a small certific as shown below, is given and must be shown on demand.

esidence or Name of Ship : . . . . . .

ame : . . . . . Age : . . . . . .

Certificate of Fæcal Examination.

ate of collection of fæces.	Date of examination.	Results.	Name of Authority.
. . . . .	. . . . .	. . . . .	. . . . .

Certificate of receiving Preventive Inoculations.

st Inoculation. Date :	2nd Inoculation. Date :	3rd Inoculation. Date :	Complete.	Name of Authority.
. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

s :

his is a clean bill of health, and you must not lose it.

you have this certificate, whereever you go you are not required to submit to another preventive inoculation. Fæcal examinations are not required within five days from the date recorded, unless in special circumstances.

his card must be shown on request to the police or sanitary officer.

)ne of the most important preventive measures against cholera in ɹn is the observation of fishermen, boatmen and sea fish and shells. measures taken at the time of an epidemic are : prohibition of transıation of fish, sanitary improvements of fish markets, preventive ɔulation, forbidding throwing of fæcal and vomited material into the a supply of pure drinking-water to ships, preventive inoculation of examination of fæces from fishermen and boatmen.

here is close collaboration between different prefectural governets in the application of these measures. Since rapid transmission of f·mation is important, the movements of fishing-boats and fish markets e investigated, so that, when cholera breaks out, the different prefectural rnments and the Central Sanitary Bureau concerned are immedier informed in regard to the time, number and place of the occurrences the preventive measures taken. Upon receipt of this information, provincial governments, in collaboration with the Central Sanitary ɹau, at once apply the necessary measures.

he public is educated by means of lectures and posters, and the ssity of disinfecting privies and well-water and the danger of eating fish or vegetables are demonstrated. The public has had enough rience with epidemics to be aware of the need of prevention.

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Annex.

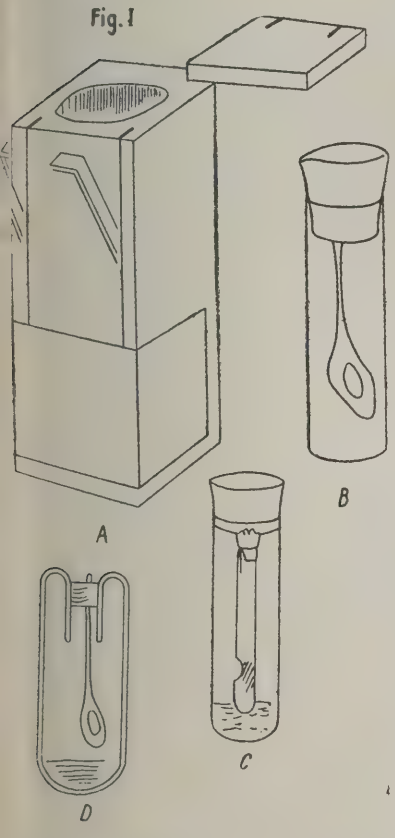
ULES FOR THE BACTERIOLOGICAL DIAGNOSIS OF CHOLERA.

(The State Institute for Infectious Diseases.)

I. Method of sampling Material for Examination.

The material for the bacteriological diagnosis of cholera is collected her from the patients or from bodies of persons suspected to have died of cholera, and water which is suspected of pollution with the cholera vibrio. These materials are collected in the following methods.

Fig. 1



A. *From Patients.*

1. *Fæces.* — Recently excreted fæcal material should be examined. If this cannot be obtained, rectal irrigation with glycerin water or the use of the instrument shown in Fig. 1, or some other appropriate means, can be employed.

2. *Vomit.* — Vomit can also be examined for the cholera vibrio.

3. *Blood or Vesicular Fluid.* — These materials are used for agglutination reactions or Pfeiffer's phenomenon. These tests are made to find whether or not the person had had cholera. To the blood or the vesicular fluid carbolic acid up to 0.5 per cent may be added.

B. *From the Corpse.*

1. Cloth soiled with fæces.
2. Fæces taken from the rectum.
3. If laparotomy is necessary, the intestinal contents should be taken from the ileum.

C. *Cholera in Water.*

In the examination of water for cholera vibrios, the sample is collected

from the surface of the water in sterilised containers. The amo collected should be at least 1 litre.

Handling Samples for Bacteriological Examination.

1. *Fæcal Containers.* — A convenient one is a wide-mouthed g cylinder, Fig. 1, B, with a wooden stopper to which a spoon is attached. is sterilised by boiling before use. A sample of fæces is taken with spoon and the cylinder is then sealed and labelled with the name, a and hour of collection. *This cylinder* may be placed in another la glass cylinder, as shown in Fig. 1, C. When the sample is to sent by mail, the glass container is placed in a wooden box, Fig. 1, A, wi cotton pad. To prevent drying, a small quantity of water may be pla in the glass cylinder, or a container, Fig. 1, D, devised by Dr. Miyagawa, r be used. Water in this container does not reach the wooden stop nor the fæcal matter, even by violent shaking. Sterilised test-tul Petri dishes and glass bottles may be used. Careful packing is essen to avoid damage of the content.

2. *Sterilisation of the Containers.* — The containers should be st lised by boiling and no container with acid or disinfectant should used.

3. When materials are to go to a distant laboratory, in addition the fæcal sample, several smears and a peptone-water and 3 agar-me tubes should also be inoculated and sent. Decomposition or drying the fæcal sample may make the detection of the vibrio difficult.

II. Method of Examination.

A. *Microscopic Examination.*

Smear specimens of the mucus in the fæces are made and stain for 1 minute with Ziel's carbolic acid fuchsin solution, diluted 10 tim If the fæcal material is not fluid, it may be mixed with salt solution.

If brightly stained, a large number of comma bacilli present a ve typical picture, but it must be kept in mind that there are other vibr closely resembling the cholera vibrio.

In addition to stained specimens, hanging-drop specimens should made to examine for motility.

B. *Culture Method.*

1. *Peptone Water.* — 10 c.c. of peptone water are placed in a te tube and sterilised. A platinum loopful of fæcal matter is planted it and the tube is incubated at 37° C. for 6 to 12 hours. Then from t upper layer smear specimens are made and stained for microscop examination. When suspicious organisms are seen, a subculture agar plates is made.

2. *Agar-plate Culture.* — The fæcal sample is suspended in eith

ptone water or salt solution and planted on an agar plate, or the pep- ue culture is plated. The plates are then incubated for 12 to 18 hours, d from the colonies, stained specimens and hanging-drop specimens made for examination. Simple agglutination tests are made on ss slides.

3. *Selective Media.* — The selective media of Dieudonné, Aronzon, on or Kabeshima may be used. Cholera vibrios on these media w well, and the growth of other organisms is inhibited. The colonies cholera on such selective media have characteristic forms and grow ter than on ordinary agar medium. Strains of cholera which have y a weak affinity for alkaline media sometimes do not grow well in these dia. In such cases, the alkalinity of the media may be reduced. other advantage of using selective media is that fæcal matter may smeared on the media and the growth of the vibrio can be directly monstrated. Within 8 to 12 hours, specific colonies are found and h these colonies simple agglutination tests can be made. The rio grown on such media is somewhat larger than usual and staining not uniform. Agglutinin reactions may also be weakened.

3. *Pure Culture.* — By picking colonies off agar plates or off the ctive media, pure cultures are made on agar slants.

4. *Tests with the Pure Culture.* — Agglutinin tests and Pfeiffer's nomenon.

III. Selection of Method of Examination.

The method of examination may be varied according as to whether h case is an initial one or not.

1. *First Case.* — In a first case it is important that the diagnosis be de as accurately and as quickly as possible. The fæces of the patient r planted in peptone water, and smear specimens are also examined. the same time, agar plate or selective media cultures are made. The ctone-water culture may be replanted on these media to obtain a te culture. With the pure culture, agglutinin reactions (quantitative) n. Pfeiffer's reaction are carried out.

2. *Subsequent Cases.* — Diagnosis on subsequent cases should be de as quickly as possible. The agglutinin reactions can be carried out ih colonies from agar plates.

3. *Suspicious Cases.* — Fæces of suspicious cases are planted in ctone water and, from this, smear specimens are made and stained microscopic examination. Subcultures are made on agar plates, n the colonies grown on this plate are used for simple agglutinin tests.

4. *Carriers and Recovered Cases.* — These cases are dealt with in the ae way as the suspicious cases. The examinations are repeated. ase of necessity, the presence of the antibodies in blood serum and cular fluid is tested.

5. *Examination of Water suspected of Pollution.* — At least 1 litre he water should be collected. To this amount are added 100 c.c. he original peptone water and mixed well, after which it is divided t flasks, each containing 100 c.c. of the sample. These flasks are

incubated for 8 to 18 hours. The upper layers of the fluid in each fl are used for smear specimens, which are stained and examined, and culture on agar plates; agglutination tests are carried out with colonies.

IV. Results of Examination.

To justify the diagnosis of cholera, the following conditions sho be fulfilled :

1. *Initial Case.* — The clinical symptoms should agree with the syr toms of true cholera if the symptoms are atypical. The case sho be considered as a suspicious cholera case if the comma bacillus is fou by microscopic examination.

If bacteriological examinations and immunological tests give p tive results, especially if the agglutinin reactions and Pfeiffer's phe menon with the diagnostic immune serum are strongly positive, the c should be diagnosed as true cholera.

2. *In subsequent cases*, a diagnosis of cholera may be justified microscopic findings, cultural characteristics, and the simple aggluti reaction.

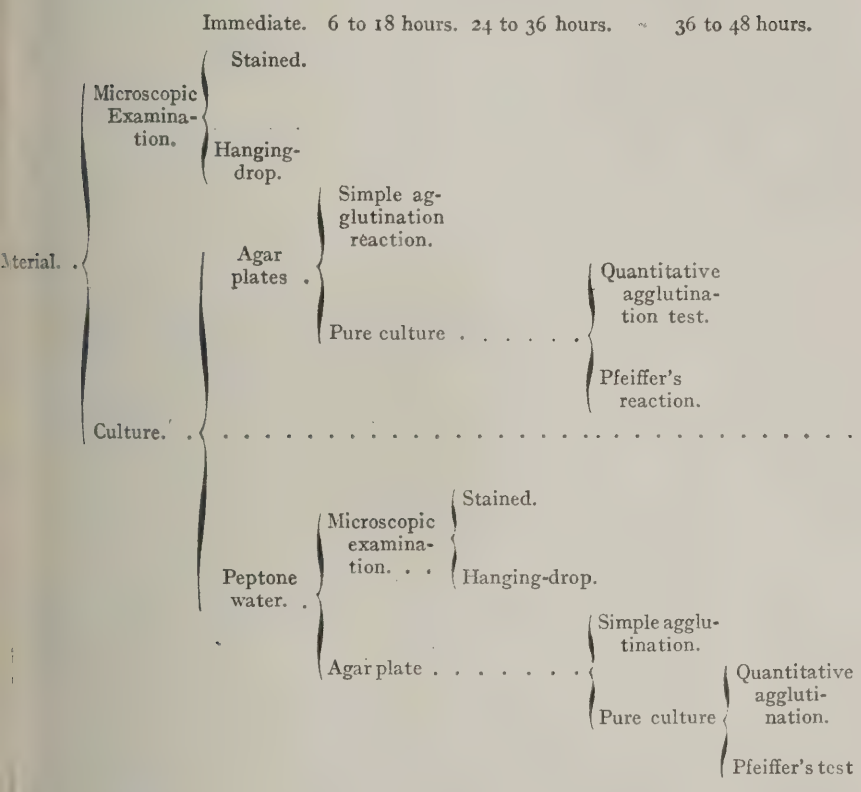
3. *Suspicious Cases.* — If two consecutive fæcal examinatio carried out at an interval of 48 hours, do not succeed in demonstrati the presence of the comma bacillus, a negative diagnosis is justified.

4. *Examination of Carriers and Recovered Cases.* — Fæcal exar nations are made every second day and if the comma bacillus is r found in three consecutive examinations the case can be consider as being free from cholera.

5. *Examination of Water.* — If comma bacilli are found in wat quantitative agglutination tests should be carried out, on the resu of which the determination of the nature of the vibrio should rest.

6. *Diagnosis of Cases who have had Cholera.* — Agglutination te are made with the blood serum or vesicular fluid; if a positive result obtained, the case may be considered as having been cholera. Befc this diagnosis is made, however, inquiry should be made regardi preventive inoculation. This inoculation may explain the positi immunological reaction. Control tests should be made and the dil tion of the serum should begin with a 20 times dilution.

7. The following time is required for making each test :



In examination of suspicious cases or carriers, recourse is had to the methods below the dotted line.

Note. — Rapid determination is most important in the case of cholera. It should be done, with the initial case, within 30 hours and in subsequent cases within 20 hours.

V. Methods.

A. *Preparation of Media.*

1. *Peptone Water.*

(*a*) Original Solution :

Distilled water	1,000 c.c.
Peptone	100 g.
Sodium chloride	100 g.
Potassium nitrate	1 g.
Crystal sodium carbonate	2 g.

The above are mixed and dissolved and sterilised.

(*b*) Peptone Water :

The original solution	1 part.
Distilled water (sterilised)	9 parts.

About 10 c.c. are placed in each test-tube.

2. *Agar Medium for Cholera Culture.*

Ordinary agar medium.	100 c.c.
10 % crystal sodium carbonate.	3 c.c.

Sterilise and use.

3. *Selective Media.*

(*a*) Dieudonné's Blood Alkaline Agar Medium.

Defibrinated ox or horse blood	500 c.c.
Normal solution of potassium hydroxide. . .	500 c.c.

The above are mixed and sterilised in the Koch apparatus for 30 minutes. (The solution is dark brownish. This is called alkaline blood solution.)

Alkaline blood solution..	3 parts
3 % agar medium.	7 parts.

The above are mixed and sterilised. Before use, it is melted and plates are made. Leave the plates in incubator several hours to liberate ammonia gas.

(*b*) Pilon's Blood Sodium Agar Medium.

To the defibrinated blood of the pig, ox, horse, sheep, rabbit or guinea-pig is added an equal amount of 12 % crystal sodium carbonate. One part of this mixture is added to 2 parts of warm 3 % neutral agar (45° C.) and mixed.

(*c*) Kabeshima's Hæmoglobin Soda Agar Medium.

To 80 c.c. of 3 % ordinary agar are added 10 c.c. of 18 % pure crystal sodium carbonate solution. Steamed for 30 minutes and cooled to 60° C. Then 3 gm. of Pfeiffer's or 5 gm. of Shinsda's hæmoglobin extracts, dissolved in 10 c.c. of salt solution, are added. The mixture is divided into 7 Petri dishes and the surface is dried.

(*d*) Aronzon's Fuchsin, Saccharose Dextrine Agar Medium.

3 % agar	100 c.c.
10 % sodium carbonate solution	6 c.c.

The above are mixed and steamed for 15 minutes, and then is added

Fuchsin saturated in alcohol.	0.4 c.c.

While stirring, add :

10 % sodium sulphite solution	2 c.c.

When the colour of the mixture is faded, add the following, which are warmed :

20 % saccharose solution 20 % dextrine solution	āā 5 c.c.

This medium is dissolved at the time of its use and plates are made.

Notes. — Certain cholera strains grow poorly in alkaline media. In such cases the following media may be recommended :

(*a*) Peptone Water.

Sodium carbonate is added in ratio of 20.6 % phenolphthalein neutral.

(*b*) Selective Media.

In Dieudonné's medium, the quantity of normal hydroxide solution i reduced to 3/4 of the blood.

In Pilon's medium, the sodium carbonate is reduced to 1.2 per cent.

The above two selective media are ordinarily used together at the sme time.

The colonies on the former medium, after 12 to 18 hours, are round ad transparent, with a greenish tinge. This medium inhibits the gowth of ordinary intestinal bacteria. The colonies on the latter redium, after 12 to 18 hours, are scarlet and easily distinguishable fom those of other bacteria.

B. *Methods of Carrying out Agglutination Tests.*

Selection of Immune Serum. — The immune serum should be pre-pred by immunising rabbits with a mixture of several strains of various tpes of cholera vibrio.

The agglutination test should be carried out with an immune serum o a high titre. Its titre should be determined beforehand. The mthod is as follows :

1. *Hanging-drop Method.* — The rabbit immune serum is diluted wh salt solution to required dilutions (a 50- or a 100-fold dilution). Ce drop of the diluted serum is placed on a cover-glass. Then the oganism from an agar culture is carefully mixed with a platinum wire ad examined under a microscope. If there is no immediate agglutination, re-examine after placing 20 minutes in an incubator. If the oganism is cholera, there should be distinct agglutination.

Notes. — (1). For control, normal rabbit serum of 10 times stronger dution than that of the immune serum should be used for the same tst. (2). In making the hanging-drop, certain strains of cholera clump gether and present an appearance of agglutination.

(Addition.)

Probal (or simple) Agglutination Test. — A drop of diluted immune sum is placed on a glass slide, and a small quantity of test organism smixed. If the organism is cholera, there should be a distinct agglutiation reaction.

2. *Quantitative Agglutination Test.* — Cholera immune serum is mxed with 0.85 % salt solution in dilution of 1 in 50, 100, 200 and so on, ul agglutination reactions are examined with suspension of the organim taken from a pure culture.

(*a*) Suspension of Organism.

A 16- to 24-hours culture on an agar slant, made by replanting spicious colonies, is suspended in salt solution (1 platinum loopful to 2 c.c. of the salt solution).

(*b*) Serum Dilutions.

Number of test-tube	I	II	III	IV	V	VI	VII	VIII	Control
Tenfold dilution of immune serum	0.4	0	0	0	0	0	0	0	0
Salt solution	1.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Throw away
Suspension of organisms	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Degree of dilution	100	200	400	800	1,600	3,200	6,400	12,800	0

Procedure.

1. Test-tubes are arranged as shown above.

2. In the first test-tube is placed 1.6 c.c. of physiological salt solution and in the others 1 c.c.

3. In the first test-tube is placed 0.4 c.c. of a tenfold dilution of immune serum and mixed well.

4. From the first tube take 1 c.c. and place it in the second. Then from the second tube take 1 c.c. and place it in the third, and so on to the last. One cubic centimetre from the last tube is thrown away.

5. One cubic centimetre of the suspension of the organism is placed in each test-tube.

6. Mix the contents well by shaking the tubes and then place in the incubator for one hour.

Of the serum and suspension, 0.5 c.c. may be used instead of 1 c.c.

Controls. — The following three controls can be used : (*a*) suspension and normal rabbit serum; (*b*) suspension and salt solution; (*c*) a known cholera vibrio, cultured for the same time and in the same way as the suspended organism, is tested with the immune serum. Ordinarily the control (*b*) alone is employed.

Notes. — 1. The newly isolated cholera vibrio from the fæces of patients has sometimes a very weak agglutinability. In such a case, several subcultures should be made before repeating the test. 2. Some strains exhibit a pseudo-agglutination. In such cases, 0.4 % salt solution or distilled water should be used for making the suspension.

3. *Pfeiffer's Phenomenon Test.* — The immune serum employed in this test should be prepared with several strains of various types as in the preparation of immune serum for agglutination tests. The bactericidal titre of such serum should be at least 0.001 c.c. In other words, the serum should be capable of producing complete bacteriolysis in 1 hour when 1 mgm. is injected into the abdominal cavity of a guinea-pig with 1 loopful of an 18- to 20-hour agar culture of cholera together with 1 c.c. of bouillon.

Method. — 1st animal : a volume of an immune serum of a high bactericidal titre is diluted 5 times with bouillon, and 1 c.c. of it is mixed

ch 1 loopful of the organism and injected into the abdomen of a inea-pig.

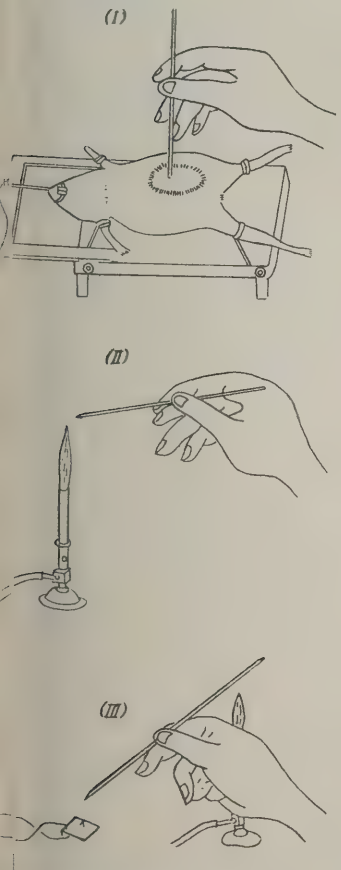
2nd animal : the same serum, diluted tenfold, is mixed with 1 loopful the organism and injected.

3rd animal (control) : a volume corresponding to 50 times the titre the immune serum is added with 1 loopful of organism and injected.

4th animal (control) : a quarter of 1 loopful of the organism is mixed h 1 c.c. of bouillon and injected.

The foregoing serums are diluted with bouillon; the test organism ained from an 18-hours culture is mixed with 1 c.c. of this diluted um and with a (blunt) needle is injected into the abdominal cavity a guinea-pig after the skin has been shaved and wiped with alcohol. small cutaneous incision is made with a knife, *through which* the injection is made. At intervals of 20 and 30 minutes and 1 hour, samples of the abdominal fluid are taken with capillary pipettes inserted through the injured skin of the abdomen. Hanging-drop specimens are examined. In the 1st and 2nd animals, if the organism is cholera, the bacterial body shows specific granular forms and disappears by dissolution of the vibrio within 20 minutes or, at latest, in 1 hour. On the other hand, in the 3rd and 4th animals, the organism should retain active movement. The 1st and 2nd animals survive, but the other two die usually on the second day. Such results indicate a positive Pfeiffer's phenomenon.

Fig. II



Method of taking Abdominal Fluid with Pipette.
(See Fig. II.)

1. The fluid rises in the capillary pipette by capillary pressure. Both ends of the pipette should be kept open.

2. Seal the free end of the pipette after the fluid is taken in.

3. Warm the air in the sealed part gently. The expansion of air will force the fluid out in drops, which are received on a cover-glass and then examined under a microscope.

Notes. — Sometimes the feeble virulence of a newly isolated cholera io complicates the carrying out of Pfeiffer's test. In such cases, the untity of the organism may be increased or it may be used after

passage through an animal. Still another method is to carry out the test with an immune serum prepared with the organism and with a known cholera vibrio.

4. *Bactericidal Test* in vitro (*Neisser-Wecksberg Method*). — This is a simple method of performing Pfeiffer's test. It has the advantage of not requiring animals, but the procedure is somewhat complicated and so is not adapted for general use. The procedure with the cholera vibrio is as follows :

1. The immune serum is inactivated by heating to 56° C. for 30 minutes and diluted to various degrees with salt solution. Of each diluted serum, 1 c.c. is placed in test-tubes.

2. Complement is obtained by bleeding a guinea-pig and separating the serum. This serum is diluted 25 or 50 times with salt solution; 0.5 c.c. is used.

3. A 24-hour growth of the test organism on agar medium is suspended in bouillon in the ratio of 1 : 100,000. Of this suspension 0.5 c.c. is placed in each test-tube.

The serum, suspension and complement in each test-tube are mixed well and then incubated at 37° C. for 2 to 3 hours. After the incubation, each test-tube content is plated out on a Petri dish with warmed agar medium at 45° C. When the agar is hardened it is incubated and the number of colonies is counted.

Bactericidal Test in Test-Tubes.

Number of Test-tube.	Dilution of immune Serum.	Quantity.	Suspension.	Complement.	Colonies.
1	10	1.0	0.5	0.5	∞
2	20	1.0	0.5	0.5	∞
3	50	1.0	0.5	0.5	300
4	100	1.0	0.5	0.5	0
5	200	1.0	0.5	0.5	0
6	500	1.0	0.5	0.5	0
7	1,000	1.0	0.5	0.5	205
8	2,000	1.0	0.5	0.5	700
9	5,000	1.0	0.5	0.5	∞
10	10,000	1.0	0.5	0.5	∞

Controls.

I. . . .	10.	1.0	0.5	0	∞
II . . .	Tenfold Normal Serum	1.0	0.5	0.5	∞
III. . .	Salt Solution.	1.0	0.5	0	∞
IV. . .	Salt Solution.	1.0	0.5	0	Immediate culture *ca.* 10,000

Note. — In concentrated immune serum a greater number of colonies is grown than in weaker immune serum. This phenomenon, according

Neisser-Wecksberg, is due to the presence of excess amboceptors, ne of which are combined with complement and others with bacteria. is prevents the complement from combining with the bacterial body. other words, it is due to deviation of complement.

5. *Notes on Examination of Cholera in Water.* — The method of exa- nation of cholera in water has already been described. It should be ot in mind that, when the cholera vibrio remains in water, it loses its glutinability, but it can be differentiated from other vibrios by agglu- ation tests. In the diagnosis of the cholera vibrio in water, its mor- ological and cultural characteristics should be carefully examined ore making a decision.

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SOCIÉTÉ DES NATIONS

ORGANISATION D'HYGIÈNE

Rapport sur les Travaux de la Huitième Session

DU

COMITÉ D'HYGIÈNE

tenue à Genève du 13 au 19 octobre 1926.

LEAGUE OF NATIONS

HEALTH ORGANISATION

Report on the Work of the Eighth Session

OF THE

HEALTH COMMITTEE

Held at Geneva from October 13th to 19th, 1926.

Publications de la Société des Nations
III. HYGIÈNE
1926. III. 23.

I.

Le Comité d'hygiène a pris connaissance du rapport de la Commission permanente de standardisation (C. H. 517) et de la relation donnée par le président sur les travaux accomplis par cette Commission pendant la session des 11, 12 et 13 octobre 1926. La résolution suivante a été adoptée:

« Le Comité d'hygiène prend note du rapport de la Commission permanente de standardisation y compris les travaux des Sous-Commissions pour l'étude des sérums antidysentérique et antitétanique. »

II.

Le rapport provisoire de la Commission pour la maladie du sommeil (C.H.505), exposant les travaux accomplis à ce jour par les experts réunis à Entebbe, sur le lac Victoria, Ouganda, et par lequel ils demandent une prolongation de six mois, en plus de la période de douze mois primitivement destinée aux travaux recommandés par la Conférence de Londres, a été examiné par le Comité d'hygiène.

Le Comité d'hygiène a été d'avis qu'il serait désirable que la Commission continuât ses travaux pendant cette période supplémentaire et, en conséquence, a adopté la résolution suivante:

« Le Comité prend acte du rapport provisoire du Dr Duke, du 3 août 1926, relatant les progrès réalisés dans l'étude de la maladie du sommeil par la mission d'experts établie à Entebbe; il s'associe à la manière dont le travail de la Commission a été apprécié dans les résolutions de l'Assemblée du 23 septembre 1926.

« Le Comité approuve la proposition de prolonger le travail de la mission pour une durée d'environ six mois au delà du terme de douze mois primitivement proposé par la Conférence de Londres. Le Comité recommande qu'en cas de nécessité, la Société des Nations s'adresse aux gouvernements participant à l'enquête, pour les inviter à fournir des contributions supplémentaires permettant d'assurer le travail de la Commission pendant la période de prolongation. »

III.

Le Comité d'hygiène a pris note des suggestions qui lui ont été faites concernant l'opportunité de communiquer à un plus grand nombre d'hygiénistes et autres, que la question intéresse, l'état des travaux de l'Organisation d'hygiène. Après discussion, le Comité a exprimé son opinion comme suit:

« Le Comité d'hygiène prie le Directeur médical de préparer un mémoire sur les méthodes appropriées en vue de répandre le plus largement possible les renseignements ayant trait aux travaux et aux publications de l'Organisation d'hygiène. »

IV.

Le président de la Commisssion du cancer a présenté, au nom de celle-ci, un rapport provisoire sur les travaux accomplis depuis le début de l'enquête décidée par le Comité d'hygiène, en tenant compte particulièrement des rapports présentés à la Commission au cours de ses séances d'octobre 1926. Après un échange d'opinions, le Comité d'hygiène a adopté la résolution suivante:

« Le Comité d'hygiène

« Prend acte de la déclaration du président de la Commission du cancer sur les travaux de cette Commission concernant la distribution géographique et raciale de la mortalité cancéreuse;

« Désire s'associer à l'expression de reconnaissance de la Commission vis-à-vis des experts qui ont si puissamment contribué au succès de l'enquête, et

« Prie la Commission de préparer pour la session suivante, après avoir terminé les rapports et enquêtes en cours, un résumé de ses travaux, ainsi que ses propositions pour des études ultérieures. »

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I.

The Health Committee considered the report of the Permanent Standards Commission (C.H. 517) and the Chairman's description of the work accomplished by this Commission during its session of October 11th, 12th and 13th, 1926. The following resolution was adopted:

" The Health Committee takes note of the report of the Permanent Standards Commission, including the work of the Sub-Committees for the study of anti-dysenteric and anti-tetanic sera."

II.

The interim report of the Sleeping-Sickness Commission (C.H. 505), outlining the work already accomplished by the experts assembled at Entebbe on Lake Victoria, Uganda, and recommending an extension of six months in addition to the twelve-months period of work as originally recommended by the London Conference, was considered by the Health Committee.

The Health Committee was of the opinion that it would be desirable for the Commission to prolong its work for this additional period, and accordingly adopted the following resolution:

" The Committee accepts the interim report of Dr. Duke of August 3rd, 1926, regarding the progress made by the expert mission on sleeping-sickness established at Entebbe and associates itself with the appreciation of this work which was expressed in the resolutions of the Assembly of September 24th, 1926.

" The Committee approves the proposal that the work of this mission should be prolonged for approximately six months beyond the term of twelve months originally proposed by the London Conference, and recommends that, should it be necessary, communications should be addressed from the League to the Governments participating in the enquiry to invite the contribution of additional funds for this purpose."

III.

The Health Committee took note of the suggestions made to them in regard to the desirability of informing a larger number of public health officers, and others who might be interested, concerning the work of the Health Organisation. After discussion, the Committee expressed its views as follows:

" The Health Committee instructs the Medical Director to prepare a memorandum on methods of disseminating more widely information in regard to the work and publications of the Health Organisation."

IV.

The Chairman, on behalf of the Cancer Commission, made a statement on the work accomplished since the enquiry was initiated by the Health Committee, with special regard to reports presented to the Commission during its session of October 1926. After an exchange of views, the Health Committee adopted the following resolution:

" The Health Committee:

" Takes note of the Chairman's statement with regard to the work of the Cancer Commission in relation to the reports on the geographical and racial distribution of cancer mortality;

" Desires to associate itself with the Commission in its expression of gratitude to the experts who have contributed so much to the success of this enquiry; and

" Requests the Commission, after the current reports and enquiries have been completed, to prepare for a subsequent session a résumé of the work already accomplished, together with their proposals for further study."

V.

Le président de la Commission du paludisme a présenté un rapport relatif aux progrès effectués en 1926, en mentionnant les voyages d'études, les études effectuées dans les régions malariques et dans les laboratoires, et les cours de malariologie. Le Comité d'hygiène a adopté la résolution suivante, présentée par le président, au nom de la Commission:

« Le Comité d'hygiène décide:

« 1. D'étendre les voyages d'études de la Commission du paludisme à des pays malariques extra-européens, remettant à une date ultérieure le choix des pays à visiter en 1927.

« 2. De continuer les recherches entreprises par la Commission et certains de ses membres sur:

« *a*) Le problème des deltas, dont l'étude a commencé aux deltas du Danube, de l'Ebre et du Pô;

« *b*) Les « grands assainissements », notamment en Italie et en Hollande;

« *c*) Les problèmes de laboratoire, détaillés dans les résolutions adoptées par le Comité d'hygiène à sa session d'octobre 1925;

« *d*) L'étude des relations existant entre les facteurs météorologiques et l'endémie malarique.

« 3. De continuer les recherches sur les alcaloïdes secondaires du quinquina, ainsi que sur les dérivés de la cupréine et sur l'hydroquinine, afin de compléter les éléments nécessaires à la convocation d'une conférence internationale de la quinine.

« 4. De renouveler, en 1927, les cours de malariologie, qui ont eu lieu cette année dans les Ecoles de Médecine tropicale de Hambourg, Londres et Paris, ainsi que les stages pratiques en pays impaludés qui leur ont fait suite. »

VI.

Le Comité d'hygiène a pris connaissance du rapport du Directeur médical sur les travaux effectués en vue de donner suite à une résolution, adoptée au cours d'une session précédente, relative à la revision projetée de la Liste internationale des causes de décès. Après examen détaillé, la résolution suivante fut adoptée:

« Le Comité d'hygiène,

« Ayant pris connaissance du rapport du Directeur médical concernant la nomenclature des causes de décès, ainsi que de la correspondance engagée à ce sujet avec l'Institut international de statistique et se référant aux observations faites pendant la discussion au sein du Comité,

« Décide:

« *a*) De charger un comité d'experts du dépouillement des documents envoyés à la Section d'hygiène par les gouvernements qui répondent à son appel, ainsi que de l'étude des travaux préparatoires à la revision de la nomenclature actuellement en usage;

« *b*) De tenir l'Institut international de statistique au courant des travaux du comité d'experts et, lorsque le moment paraîtra opportun, de convier à une réunion préparatoire ledit comité et une délégation de l'Institut, en vue d'une entente sur les questions qui seront soumises à la future conférence internationale. »

VII.

Le président de la Commission de la variole et de la vaccination a exposé les progrès de l'enquête, ainsi que les travaux de laboratoire et les études pratiques effectués dans les divers pays.

Le Comité d'hygiène décide de prier la Commission de se réunir prochainement avec les experts dont elle juge la collaboration nécessaire pour la préparation d'un premier rapport d'ensemble.

V.

The Chairman of the Malaria Commission made a statement on the progress of the work in 1926, referring to the study tours, field and laboratory studies, and the malaria courses. The Health Committee adopted the following resolution, presented by the Chairman on behalf of the Malaria Commission:

" The Health Committee decides:

" 1. To extend the study tours of the Malaria Commission to some extra-European countries where malaria prevails, postponing to a future date the selection of those countries to be studied in 1927.

" 2. To continue the studies undertaken by the Commission and by certain of its members on:

" (*a*) The problem of deltas (already begun on the deltas of the Danube, the Ebro and the Pô);

" (*b*) The effect of major sanitary measures, especially in Italy and Holland;

" (*c*) The laboratory problems described in the resolutions adopted by the Committee during the October 1925 session;

" (*d*) The relations between certain meteorological conditions and the prevalence of malaria.

" 3. To continue the study of the secondary alkaloids of cinchona, as well as of hydroquinine and cuprein derivatives, in order to complete the preparatory measures for an international conference on this subject.

" 4. To repeat in 1927 the malaria courses at the Institutes of Tropical Medicine at Hamburg, London and Paris, followed by the practical stage in countries where malaria prevails."

VI.

The Health Committee considered the report of the Medical Director on the work undertaken to give effect to a resolution adopted at a previous session in regard to the forthcoming revision of the International List of Causes of Death. After careful examination the following resolution was adopted:

" The Health Committee,

" Having considered the report of the Medical Director on the List of Causes of Death, the correspondence on this subject with the International Institute of Statistics and the observations made during the discussions in the Committee,

" Decides:

" (*a*) To entrust to a committee of experts the study of the documents transmitted to the Health Section by the Governments which comply with its request and of the preparatory work incident to the revision of the nomenclature now in use;

" (*b*) To keep the International Institute of Statistics in touch with the work of the committee of experts and, when the moment appears opportune, to convoke a preparatory conference of the committee of experts and a delegation from the Institute, in order to secure agreement on the questions which will be submitted to the future international conference."

VII.

The Chairman of the Smallpox and Vaccination Commission outlined the progress of the enquiry, including the laboratory and field studies in the countries concerned.

The Health Committee decided to request the Commission to meet at an early date with such experts as are at this stage in its judgment necessary for the purpose of preparing a progress report.

VIII.

La proposition du Dr Tsurumi relative à l'hygiène scolaire a été présentée au Comité d'hygiène, qui a décidé d'agir dans le sens proposé et a adopté la résolution suivante:

« Le Comité d'hygiène,

« Décide de charger le Directeur médical de réunir une documentation en vue d'une étude comparative des programmes et réglementations d'hygiène scolaire et de l'étude de certains problèmes spéciaux, tels que l'alimentation scolaire et la prophylaxie de certaines maladies infectieuses à l'école; ces études feront l'objet d'un rapport au cours d'une session ultérieure. »

IX.

Le Comité d'hygiène a pris connaissance du rapport de la Conférence des experts hygiénistes en matière de protection de l'enfance (C.H. 507), de même que des propositions concernant l'étude de certains sujets relatifs à l'hygiène de l'enfant et à la mortalité infantile, et a adopté la résolution suivante:

« Le Comité d'hygiène

« Remercie les membres experts de la Conférence pour leur travail et approuve les propositions d'études contenues dans le rapport.

« Décide d'inviter des experts des pays de l'Amérique du Sud à participer aux études proposées par la Conférence et de convoquer ceux-ci dans un pays de l'Amérique latine pour examiner les résultats de leurs études et présenter un rapport. »

X.

Le Comité d'hygiène adopte le rapport du Directeur médical sur les travaux accomplis depuis la sixième session (mai-octobre 1926).

XI.

Le Comité d'hygiène a pris connaissance de la résolution présentée à la septième session ordinaire de l'Assemblée par la délégation de Cuba (A. 112. 1926. III) relative aux problèmes de l'eugénique et a décidé que le moment n'était pas encore opportun pour proposer une étude sur ce sujet.

XII.

Le Comité d'hygiène ayant examiné la résolution présentée à la septième session ordinaire de l'Assemblée par la délégation de la Tchécoslovaquie (A. 112. 1926. III) relative à l'éducation physique a décidé ce qui suit:

« Le Comité d'hygiène prie le Directeur médical de préparer, de concert avec des experts en matière d'éducation physique, et après consultation avec les autorités sanitaires de la Tchécoslovaquie, un rapport sur ce sujet à soumettre lors d'une session ultérieure. »

XIII.

Le Comité d'hygiène a pris connaissance de la résolution présentée à la septième session ordinaire de l'Assemblée par la délégation de l'Uruguay relative au problème de l'alimentation et, reconnaissant l'importance internationale que revêtirait une enquête de cette nature, a décidé d'en remettre l'étude plus détaillée à une session ultérieure.

VIII.

The proposal of Dr. Tsurumi in regard to school hygiene was presented to the Health Committee, which decided to proceed accordingly and adopted the following resolution:

"The Health Committee:

"Decides to instruct the Medical Director to collect information for a comparative study of school health programmes and regulations and for the study of certain special problems of school hygiene such as nutrition of school children and recent experience in the prevention of certain infectious school diseases, for report to a subsequent session."

IX.

The Health Committee considered the report of the Conference of Child Welfare Health Experts (C.H. 507), together with the proposals for the study of certain subjects relating to child hygiene and infant mortality. The following resolution was adopted:

"The Health Committee:

" Expresses its appreciation of the work of the Conference of experts and approves the proposals for investigations contained in its report;

" Decides to invite experts from South American countries to participate in the studies proposed by the Conference, and to convene these experts in a Latin-American country to examine and present a report on the results of their studies."

X.

The Health Committee adopted the report of the Medical Director on the work accomplished since the sixth session (May-October 1926).

XI.

The Health Committee considered the resolution relating to the study of eugenics presented to the seventh ordinary session of the Assembly by the Cuban delegation (A. 112. 1926. III) and decided that the present moment was not opportune to propose an enquiry on this subject.

XII.

The Health Committee having considered the resolution relating to physical education presented to the seventh ordinary session of the Assembly by the delegation of Czechoslovakia (A. 112. 1926. III) decided as follows:

" The Health Committee requests the Medical Director, in consultation whith experts in physical education and after consultation with the health authorities of Czechoslovakia, to prepare a report on this subject for a subsequent session."

XIII.

The Health Committee considered the resolution in regard to the problem of nutrition presented to the seventh ordinary session of the Assembly by the delegation of Uruguay and, while realising the international importance that a study of this nature would have, decided to postpone more detailed consideration to a subsequent session.

XIV.

« Le Comité d'hygiène,
« Ayant pris connaissance du deuxième rapport provisoire sur le trachome,
« Décide de continuer l'enquête dans le sens indiqué dans ce rapport. »

XV.

« Le Comité d'hygiène,
« Vu la disposition de l'arrangement conclu avec l'Office international d'hygiène publique qui règle l'Organisation d'hygiène de la Société des Nations,
« Vu la convenance qu'il y a à faire, dans un avenir rapproché, des propositions au Conseil de la Société des Nations pour la nomination des membres du Comité à désigner par lui,
« Décide de charger le Bureau de faire les propositions nécessaires pour la désignation des membres du Comité d'hygiène au choix du Conseil de la Société des Nations. »

XIV.

" The Health Committee,
" Having taken note of the second provisional report on trachoma,
" Decides to continue the enquiry along the lines indicated in that report. "

XV.

" The Health Committee,
" In view of the stipulation contained in the agreement with the *Office international d'Hygiène publique* which governs the Health Organisation of the League of Nations, and
" In view of the convenience there would be in making proposals to the Council of the League of Nations at an early date regarding the nomination of members to be appointed by the Council:
" Decides to authorise the Bureau to make the necessary proposals regarding the nomination of members of the Health Committee to be selected by the Council of the League of Nations."

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SOCIÉTÉ DES NATIONS

ORGANISATION D'HYGIÈNE

COMMISSION DU CANCER

CONSIDÉRATIONS SUR LES RAPPORTS PRÉSUMÉS ENTRE LE CANCER ET LA RACE D'APRÈS L'ÉTUDE DES STATISTIQUES ANTHROPOLOGIQUES ET MÉDICALES DE QUELQUES PAYS D'EUROPE

PAR

M. Alfredo NICEFORO
Professeur de statistique et de démographie à l'Université de Naples.

M. Eugène PITTARD
Professeur d'anthropologie à l'Université de Genève.

Genève 1926.

LEAGUE OF NATIONS

HEALTH ORGANISATION

CANCER COMMISSION

CONSIDERATIONS REGARDING THE POSSIBLE RELATIONSHIP OF CANCER TO RACE BASED ON A STUDY OF ANTHROPOLOGICAL AND MEDICAL STATISTICS OF CERTAIN EUROPEAN COUNTRIES

BY

Alfredo NICEFORO
Professor of Statistics and Demography at the University of Naples.

Eugène PITTARD
Professor of Anthropology at the University of Geneva.

Geneva 1926.

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ORGANISATION D'HYGIÈNE
COMMISSION DU CANCER

CONSIDÉRATIONS SUR LES RAPPORTS PRÉSUMÉS ENTRE LE CANCER ET LA RACE, D'APRÈS L'ÉTUDE DES STATISTIQUES ANTHROPOLOGIQUES ET MÉDICALES DE QUELQUES PAYS D'EUROPE

PAR

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LEAGUE OF NATIONS

HEALTH ORGANISATION
CANCER COMMISSION

CONSIDERATIONS REGARDING THE POSSIBLE RELATIONSHIP OF CANCER TO RACE, BASED ON A STUDY OF ANTHROPOLOGICAL AND MEDICAL STATISTICS OF CERTAIN EUROPEAN COUNTRIES

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INTRODUCTION

En recommandant au Comité d'hygiène de la Société des Nations la publication du présent volume, la Commission du cancer tient à rappeler brièvement les circonstances à la suite desquelles ont été entreprises les recherches qui font l'objet de ces intéressantes monographies.

Des rapports publiés antérieurement ont déjà rendu compte des progrès réalisés par la Commission et les experts qui lui prêtent leur collaboration, dans l'étude des causes des différences qui existent entre les taux de mortalité pour certaines formes de cancer dans les pays choisis pour cette enquête. Ces rapports ont permis de constater que l'explication de ces différences est un problème dont la solution est plus difficile encore qu'on ne l'avait prévu; on pourrait même dire qu'aucune solution satisfaisante n'a encore été donnée au problème; bien plus, il est possible que tant que notre connaissance du cancer et nos moyens d'étude resteront ce qu'ils sont, il ne puisse être fourni de solution résistant à l'épreuve de la critique scientifique.

Néanmoins, en examinant, une à une, différentes explications possibles, la Commission a eu la satisfaction de mettre en lumière de nombreux faits nouveaux et de formuler, au sujet de l'incidence de la mortalité par cancer et de la lutte contre cette mortalité, diverses considérations d'ordre démographique, clinique et administratif, qui ne sont nullement dépourvues d'intérêt pratique. La Commission estime que les rapports dans lesquels ces faits et considérations ont été exposés constituent une contribution utile à l'étude si activement poursuivie dans tous les pays. Ces premiers résultats acquis par la Commission ont été facilités du fait que les principaux experts qui ont procédé aux recherches se sont réunis, à diverses reprises, en un Sous-Comité et ont pu, grâce à ces réunions et à des échanges de correspondance, conserver à tous les stades de leurs travaux et de leur activité un caractère de comparabilité et d'harmonie. La Commission ne saurait exprimer trop hautement au professeur GREENWOOD, président de ce Sous-Comité, et à ses autres membres, énumérés à la page 4, son appréciation des services qu'ils ont rendus, et du dévouement dont ils ont fait preuve.

Le volume actuel a pour origine l'opinion admise l'an dernier par ce groupe d'experts, à savoir que leur tâche se trouvait entravée par l'apparition fréquente d'explications ou de théories qui, si vaines qu'elles parussent être aux yeux du chercheur effectuant des recherches précises, n'en exerçaient pas moins une grande influence sur l'opinion publique et même scientifique. Aussi, dans une enquête ayant pour objet d'expliquer pourquoi le taux de la mortalité due à une forme particulière de cancer dans un pays donné était supérieur au taux dans un autre pays, il était impossible de ne pas songer à des considérations de race, étant donné, notamment, que les différences de mortalité entre des personnes de nationalités diverses parfois persistent dans des milieux extrêmement différents. En outre, aucune réunion de savants comprenant une importante proportion de médecins ne peut oublier l'importance que des chercheurs renommés, notamment en Allemagne et en Italie, ont attaché aux types constitutionnels, c'est-à-dire anthropologiques, dans l'étiologie de diverses maladies. Dans ces conditions, il a été proposé que la Commission, tout en veillant à ne pas s'engager dans le champ si vaste et si mal connu des recherches anthropologiques, devrait au moins obtenir un résumé clair et bien documenté de l'état actuel des connaissances dans ce domaine, et qu'il conviendrait d'essayer de comparer la répartition anthropologique des races, en Europe par exemple, avec la répartition du cancer dans les mêmes régions géographiques. Cette étude a donc été poursuivie, selon un

INTRODUCTION

In recommending the publication of this volume to the Health Committee of the League of Nations, the Cancer Commission desires briefly to recall the occasion which led to the investigations to which these admirable monographs relate.

In reports already published, accounts have been given of the progress made by the Commission and its expert collaborators in the investigation of the causes of the differences which exist between the mortality rates from certain forms of cancer in the countries selected for study. From these reports it will have been seen that the problem of explaining these differences has proved even more difficult than was anticipated. It cannot, indeed, be said that any satisfactory solution has so far been found; possibly no satisfactory solution that will stand the test of scientific criticism can be obtained whilst our knowledge of cancer and the means available for its investigation remain as at present.

Nevertheless, in considering different possible explanations, one by one, the Commission has had the satisfaction of obtaining many facts which were new and of presenting various considerations, demographic, clinical and administrative, regarding the prevalence and prevention of cancer mortality, which are by no means without practical importance. They believe that the reports in which these facts and considerations have been set out have furnished a useful contribution to the studies of this question, which are being so actively pursued in all countries. In the achievement of this result the Commission have greatly profited by the fact that the principal expert investigators who have carried out the work have met from time to time as a Sub-Committee, and by means of these meetings and correspondence with one another have secured comparability and harmony of purpose at every stage. The Commission cannot express too highly their obligation to Professor GREENWOOD, the Chairman of this Sub-Committee, and to its other members, named on the list on page 5, for their devoted services in this matter.

The present volume results from the view taken last year by this body of experts, that their work was hampered by the frequent introduction of explanations or theories, which, however unpromising they might seem to be from the point of view of the exact investigator, in fact greatly influenced popular and even scientific opinion. Thus, in an enquiry the object of which was to explain why the rate of mortality from a particular form of cancer in one country was higher than in another country, it was impossible not to think of the implications of race itself, particularly when it appeared that the differences of mortality between members of different nationalities sometimes persisted under widely different environments. Further, no body of scientific workers containing a large proportion of members of the medical profession could forget the importance which eminent investigators, particularly in Germany and Italy, had attached to constitutional, *i.e.*, anthropological, types, in the ætiology of various diseases. In these circumstances, it was suggested that the Commission, while taking care not to embark upon the wide and ill-charted sea of anthropological investigation, should at least secure a clear and adequately documented account of the present state of knowledge respecting it and that an attempt should be made to compare the anthropological distribution of races, in Europe for example, with the distribution of cancer in the same geographical regions. The subject

programme examiné en détail avec le Sous-Comité, par deux de ses membres, dont la compétence à cet égard est universellement reconnue.

Le présent ouvrage représente l'opinion soigneusement documentée de ces deux experts sur l'état actuel de nos connaissances, mais il est rédigé sous une forme qui le rend accessible à toute personne instruite, même ne possédant aucune connaissance spéciale en anthropologie. Les auteurs de ces monographies sont, il va sans dire, personnellement responsables des thèses qui y sont soutenues. On constatera, d'ailleurs, qu'ils ont insisté particulièrement sur l'existence d'importantes lacunes, tant dans les statistiques anthropologiques que dans les statistiques médicales qu'ils ont eues à leur disposition. On peut espérer que ces rapports stimuleront de nouveaux efforts en vue de combler ces lacunes, et qu'ils montreront avec quelle prudence il convient de procéder lorsque l'on touche à des problèmes ethniques et lorsque l'on examine les assertions, si souvent formulées, qu'une race donnée est plus ou moins susceptible qu'une autre aux attaques du cancer.

Genève, octobre 1926. *(Paraphé)* G. S. B.

has been accordingly pursued, on lines discussed in detail with the Sub-Committee, by two of its members whose high qualifications for the task will be universally recognised.

This volume not only represents a considered judgment of these two experts upon the present state of knowledge, but is so written as to be intelligible to any educated person without previous special knowledge of anthropology. The authors of these monographs are themselves responsible for the arguments which they contain, and it may be observed that they have brought into great prominence the existence of large lacunæ, both in the anthropological and in the medical statistical data which were available for the study they undertook. It may be hoped that, as a result of these reports, further efforts may be made to fill these gaps, and also that they will serve as examples of the caution which it is necessary to employ when handling problems of race, and when examining the assertions which so often are made that a given race is more liable or less liable to attack by cancer than another.

Geneva, October 1926.

(Initialled) G. S. B.

Considérations sur les rapports présumés entre le cancer et la race, d'après l'étude des statistiques anthropologiques et médicales de quelques pays d'Europe.

Première partie.

ÉTUDE PRÉLIMINAIRE COMPARATIVE SUR LA RÉPARTITION DES RACES ET DES TAUX DE LA MORTALITÉ PAR CANCER EN ITALIE, DANS LA PÉNINSULE IBÉRIQUE, EN BELGIQUE ET EN HOLLANDE, AVEC QUELQUES OBSERVATIONS SUR LES PAYS SCANDINAVES, LA BAVIÈRE ET LES PAYS DE L'ANCIEN EMPIRE D'AUTRICHE

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Chapitre premier

Par le professeur Alfredo NICEFORO.

OBSERVATIONS SUR CERTAINES QUESTIONS RELATIVES A LA RACE

I.

LA RACE ET LE CANCER. — POSITION DU PROBLÈME.

En consultant les études médicales les plus variées sur le cancer, on rencontre assez fréquemment l'affirmation de l'existence d'un rapport entre la fréquence du cancer et la race.

Le plus souvent, la « race blanche » est opposée aux « races de couleur », à la « race nègre » ou aux « races jaunes ». Souvent aussi on oppose les unes aux autres certaines races blanches. Presque toujours, cependant, on remarquera que le mot « race » est improprement employé; cette constatation (en dehors d'autres considérations que nous exposerons plus loin) nous oblige à faire certaines réserves sur la plupart des conclusions auxquelles seraient déjà arrivés les auteurs qui croient avoir présenté des documents probants sur l'existence d'un rapport entre la race et le cancer. Il est essentiel, avant de conclure — si toutefois il est possible d'arriver à des conclusions fermes — de fixer tout d'abord la définition du mot « race », de comparer, là où cette comparaison est possible, la répartition de la population selon la *race*, au sens exact du mot, avec celle de la mortalité par cancer, et de discuter les résultats que ces comparaisons pourront donner. Ce n'est qu'après ce travail préliminaire qu'il sera possible de voir s'il y a réellement des conclusions à présenter.

II.

QUELQUES EXEMPLES DU GENRE DE DOCUMENTATION ET DES MÉTHODES EMPLOYÉES JUSQU'ICI DANS L'ÉTUDE DES RAPPORTS ENTRE LA RACE ET LE CANCER.

1. On a maintes fois répété, au sujet de la fréquence comparée du cancer parmi les races de couleur et les races blanches, que cette maladie est beaucoup moins fréquente chez les hommes de couleur que chez les blancs. Dans son traité de *Géographie médicale* (Paris, 1884), par exemple, A. Bordier écrivait déjà qu'il y avait immunité du nègre pour le cancer, puisque l'expédition anglaise chez les Achantis signalait un rapport de 63 à 100 entre la morbidité cancéreuse des noirs et celle des blancs. Il ajoutait que la mortalité cancéreuse des nègres aux Etats-Unis était bien inférieure à celle des blancs, puisqu'on ne relevait que 634 décès de noirs par cancer pour 1.000 décès de blancs (cette méthode de comparer la mortalité de deux groupes différents de population est d'ailleurs foncièrement erronée). Il faisait remarquer, en outre, que, d'après les observations des docteurs Girard, Huard, Chassaniol et Landry, le cancer était extrêmement rare chez les nègres du Sénégal; ces médecins n'en avaient observé que de rares cas pendant leur séjour chez ces populations. Il affirmait enfin que la rareté du cancer est une des caractéristiques de l'Annamite et du nègre [1].

[1] Pages 433, 435, 443, 464, 496.

De même, le Dr Gubler avait écrit, avant Bordier, que « la race nègre n'est pas tributaire des affections cancéreuses, mais qu'il faudrait de gros chiffres pour prouver l'absence (ce qui semble peu probable) ou du moins la rareté du cancer chez cette race »[1]. Nous pourrions rappeler d'autres affirmations aussi vagues, telles que celles du Dr Mahé dont la monographie de géographie médicale parut presqu'en même temps que celle du Dr Bordier: « Le cancer serait rare dans les provinces turques d'Europe, notamment à Constantinople. Il serait rare en Arabie et en Perse; ... les maladies cancéreuses sont très rares en Egypte; ... les Arabes comme les Turcs en seraient relativement épargnés... Le cancer serait également fort rare en Afrique ... Parmi les nègres *(sic)*, les Abyssins seraient les plus atteints ... Les races noire et jaune, surtout la première, y paraissent moins sujettes ... Peut-être les populations de l'extrême-nord sont-elles relativement épargnées[2] ». A remarquer aussi l'erreur de méthode statistique que commettait Mahé en comparant la « mortalité par cancer chez les différentes races et les différents peuples »: il croyait pouvoir affirmer que le cancer était plus fréquent dans un groupe donné de population que dans un autre, lorsque la mortalité proportionnelle par cancer (décès par cancer par rapport à tous les décès) y était plus élevée[3]. En « Islande, le cancer serait très rare s'il est vrai qu'il n'a fourni que 3 °/oo de la mortalité totale; en Norvège, au contraire, il a causé jusqu'à 32 °/oo de la mortalité totale ». Cette erreur de méthode qui implique aussi que l'auteur prend le nombre *absolu* des décès pour la *mortalité* se retrouve aujourd'hui encore, à propos du cancer, dans certaines études de géographie médicale. Nous nous empressons d'ajouter, cependant, que la belle monographie du Dr Mahé, quoique assez vieillie de nos jours, contient des pages de tout premier ordre.

Les études les plus récentes sur le cancer signalent encore, en traitant le problème des rapports entre le cancer et la race, le fait que le cancer serait rare dans l'Asie septentrionale, l'Arabie et la Syrie, plus fréquent dans les Indes, et très fréquent au Japon[4].

2 De même, on a cru pouvoir affirmer, sur la foi d'observations et d'enquêtes de médecins plutôt que de véritables statistiques, que le cancer est assez rare chez les Indiens du nord de l'Amérique et les Esquimaux du Labrador et de l'Alaska. On n'en aurait observé que 29 cas parmi 115.000 Indiens, d'après l'enquête du Dr I. Levin, et, d'après celle de la commission « for Indian Affairs », il ne se serait produit, en 1914, que 2 décès par cancer parmi 63.000 Indiens. Le Dr Hrdlicka a également affirmé la rareté du cancer parmi les Indiens[5].

3. Lorsqu'on étudie la possibilité de l'existence d'un rapport entre le cancer et les races de couleur, on cite de véritables documents statistiques, tels que, par exemple, les statistiques démographiques des Etats-Unis d'Amérique. Ces statistiques indiqueraient:

a) Qu'il y a eu augmentation de la mortalité par cancer — du moins augmentation statistique — tant pour les blancs que pour la population de couleur. Cette mortalité qui était en 1891 de 54 pour 100.000 habitants chez les blancs et de 40 pour 100.000 chez les « colored », s'est élevée à 84,6 et à 62,3 respectivement en 1905–1914. Ces chiffres sont tirés des relevés faits pour 8 villes des Etats-Unis. Pour la totalité de la « Registration

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[1] Dr Gubler: *Du cancer chez les nègres*, « Bulletin de la Société d'anthropologie de Paris », 1879, séance du 15 mai.

[2] Dr Mahé: *France. Géographie médicale*, Paris, « Dictionnaire de Dechambre », pages 362 et 363.

[3] Dr Mahé, *op. cit.* page 361. Le traité du Dr Mahé contient cependant des remarques de toute première importance.

[4] Voir l'étude du prof. P. Menetrier: *Cancer*, Paris, 1909, p. 498. Des observations très intéressantes et de bonnes données se trouvent dans le mémoire du Dr Bashford : *The ethnological distribution of cancer*. « Scientific Reports on the investigation of the Imperial Cancer Research Fund », London, 1908.

[5] Cf. Fr. L. Hoffman: *The mortality from cancer*, etc., Newark, New Jersey, 1915, pages 151 et 152.

Area » des Etats-Unis, la mortalité par cancer est de 76,7 chez les blancs et de 56,1 chez les « colored » (1910–1912);

b) Pendant cette période assez longue (1891-1914), la mortalité, par cancer, des blancs a été constamment *supérieure* à celle des « colored »;

c) Si l'on considère la mortalité par cancer dans chaque groupe d'âge, on trouve que les blancs accusent chaque fois une mortalité cancéreuse plus élevée que les nègres (il y a cependant quelques exceptions, surtout au-dessous de 40 et même de 50 ans). La mortalité par cancer augmente rapidement après la 40me année, chez les blancs comme chez les « colored », mais bien plus rapidement chez les premiers; ainsi, par exemple, le taux de mortalité par cancer, qui est de 210 pour les « colored » et de 244 pour les blancs, entre 50 et 59 ans, s'élève pour le groupe d'âge 70–80 ans à 307 chez les « colored » et à 633 chez les blancs (Maryland, 1909-1913). Le taux brut de mortalité par cancer de l'Etat de Maryland a été de 78,5 pour les blancs et 53,3 pour les « colored » de 1909-1913; il devient 74,3 pour les premiers et 58,0 pour les seconds lorsqu'il est « standardisé » d'après l'âge [1].

La différence entre le taux de mortalité par cancer chez les nègres des Etats-Unis et celui — bien moins élevé — que présenteraient les nègres d'Afrique, proviendrait-elle du changement d'habitudes (alimentation, etc.) des nègres d'Amérique, qui aurait déterminé chez eux un changement de constitution? [2] Et l'infériorité de la mortalité par cancer du nègre d'Amérique, par rapport à celle du blanc, ne serait-elle pas due en partie à l'infériorité professionnelle du médecin nègre, à l'infériorité de ses connaissances et de ses moyens diagnostiques? [3] Il vaudrait la peine, à notre avis, de s'arrêter beaucoup plus qu'on ne l'a fait jusqu'ici à l'exactitude du certificat de décès chez la population de couleur des Etats-Unis d'Amérique. Tandis que, par exemple, de 1910 à 1920, la mortalité par maladies *inconnues* ou *mal définies* dans les « Registration States » a oscillé, chez les blancs, entre 10 et 20 pour 100.000 habitants, elle a varié chez les « colored » entre 40 et 90. Dans les régions rurales des « Registration States », ce taux oscille entre 15 et 25 pour les blancs et s'élève jusqu'à 130 pour la population de couleur, ce qui permet de soupçonner qu'une partie des décès survenus dans la population de couleur et inscrits sous la rubrique « cause inconnue ou mal définie » devrait être transférée à la rubrique « cancer ». Cette question est, du reste, d'ordre beaucoup plus général qu'elle ne le paraît; elle intéresse directement toute étude sur la répartition géographique de la mortalité par cancer.

d) Si l'on étudie enfin la mortalité par cancer en considérant séparément chacun des sièges de la maladie, on trouvera toujours un taux plus élevé pour les blancs, assez souvent même, double de celui des « colored »; la seule exception à cette règle est le cancer des organes génitaux de la femme, qui provoque une mortalité de 15,1 pour 100.000 habitants chez les « colored » et de 11,4 seulement chez les blancs (Maryland, 1909-1913).

4. Les statistiques démographiques japonaises et anglaises concernant telle ou telle population asiatique constituent également une importante documentation statistique. Nous savons, par exemple, qu'au Japon, la mortalité par cancer est de 64,3 pour 100.000 habitants (1908-1912), donc inférieure à celle de la plupart des pays d'Europe, Tokio accuse une mortalité cancéreuse de 73,6, c'est-à-dire inférieure à celle de nombreuses villes européennes (Copenhague 161, Berlin 134, Vienne 129, etc. — 1908-1912 —), mais ces chiffres, en réalité, ne signifient pas grand'chose s'ils ne sont pas interprétés et « éclairés » par des renseignements sur la composition par âge de la population, les métiers et occu-

[1] Voir Fr. L. Hoffman, *op. cit.*, pages 235, 237, 239. Voir aussi L. I. Dublin, E. W. Kopf et G. H. v. Buren: *Cancer mortality*, etc. « Metropolitan Life », 1925, page 24.

[2] R. Matas: *Surgical peculiarities of the american negro*, « Trans. of Amer. Surg. Ass. », 1896.

[3] Fr. L. Hoffman, *op. cit.*, page 129.

pations qui prédominent dans chaque pays, les usages et les mœurs relatifs à l'assistance aux malades, le mode d'enregistrement des décès, la « force d'attraction » que chaque ville exerce sur les malades de la ou des provinces, etc.

5. Le problème du rapport entre la race et la fréquence de certaines maladies a été parfois envisagé en opposant non pas les races blanches aux races de couleur, mais certaines races blanches entre elles. Cela ne se fit pas sans tomber, presque toujours, dans des inexactitudes plus ou moins graves.

On a parlé, par exemple, des rapports existant entre telle ou telle « race » blanche et le cancer, ou mieux, entre telle ou telle « race » blanche et le degré de réceptivité ou d'immunité vis-à-vis d'une maladie donnée; et à ce propos on a parlé de race anglo-saxonne, de race germanique, de race latine, ou même des populations italiennes, anglaises ou françaises, comme étant autant de « races » distinctes: il n'est pas rare que des démographes ou même des médecins en comparant entre eux les taux de mortalité des différentes *nationalités* ou des différentes catégories d'immigrés aux Etats-Unis parlent des Italiens, des Anglais, des Polonais, des Irlandais, des Allemands, comme d'autant des races différentes.

Nous devons, néanmoins, signaler quelques études de géographie médicale qui se sont inspirées, il y a déjà longtemps, d'une classification assez rationnelle des races (blanches). Nous faisons allusion aux études de J. Arnould et du Dr G. Lagneau: c'est d'ailleurs à ce dernier que J. Arnould a emprunté les lignes directrices de son travail sur la pathologie de la France en ce qui concerne la race [1]. En esquissant la géographie médicale de la France, le Dr Lagneau traçait en même temps la géographie des races de ce pays; il parlait d'une race bretonne, d'une race celtique (centre de la France et les Alpes), d'une race ligure (côte méditerranéenne), et d'une race belgo-normande. On pourrait aujourd'hui faire certaines réserves au sujet de cette répartition, mais on doit reconnaître dans les « races » bretonne et celte les brachycéphales ou mieux les brachymorphes, correspondant, ainsi que nous le verrons bientôt, à l'*Homo alpinus*; dans la race ligure, les dolichomorphes bruns, correspondant à l'*Homo mediterraneus*, et dans la race belge-normande, les dolichomorphes blonds correspondant à l'*Homo europaeus*. Au moment où le Dr Lagneau esquissait son anthropologie de la France (1876 environ), les documents anthropométriques et colorimétriques sur la composition de la population par départements étaient loin d'être abondants; il existait, il est vrai, une « carte ethnique » de la France dressée par H. Dufour et Dussieux, indiquant par des teintes diverses la juxtaposition des principaux éléments ethniques qui ont concouru à la formation de la nation française (Atlas géographique, carte N° 37), mais cette carte représentait plutôt la traduction graphique des connaissances historiques et linguistiques de l'époque, que celle des connaissances anthropologiques. Le Dr Lagneau n'avait donc à sa disposition que les données des statistiques militaires et celles, très précieuses, que Broca et ses collègues étaient en train de réunir à la Société d'anthropologie de Paris [2].

Dans leur comparaison entre les différentes races qui peuplent la France et la géographie médicale française, les Drs Lagneau et Arnould s'étaient arrêtés non pas spécialement sur le cancer — dont la répartition par départements était alors très mal connue — mais

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[1] J. Arnould: *France (pathologie)*, « Dictionnaire des sciences médicales de Dechambre », pages 779 et suivantes. — G. Lagneau: *France (anthropologie)*, « Dictionnaire des sciences médicales de Dechambre », pages 25 et suivantes et pages 80 et suivantes. Les premières études du Dr Lagneau sur ce sujet ont paru en 1869-1870, « Mémoires de l'Académie de médecine ». XXIX.

[2] C'est aussi à ce moment-là, ou à peu près, que R. Collignon publia sa monographie: *Etude des principales races en France*, « Bulletin de la Société d'anthropologie de Paris », 1883. Cette monographie, complètement oubliée aujourd'hui, est fort ingénieuse, et nous pensons qu'il serait encore utile de s'inspirer de la méthode adoptée par Collignon, si l'on voulait faire des recherches approfondies sur les caractères physiques et physiologiques des différents types humains.

sur les maladies et infirmités que les statistiques des conseils de revision avaient mises en évidence. Nous pourrions citer aussi l'étude du Dr Du Cazal, « Répartition, en France, des infirmités », etc., publiée dans le « Bulletin de la Société d'anthropologie de Paris », en 1896. Cet auteur, tout en tenant compte de la répartition des races en France, fait remarquer qu'il ne faut pas prétendre tout expliquer (en matière de répartition géographique des infirmités) par la race, ainsi que ses prédécesseurs avaient été tentés de le faire.

Il faut enfin rappeler, à propos de ces comparaisons entre la « race » — au sens propre du mot — et le cancer, les recherches du Dr Kruse (1901) et de F. C. Shrubsall (1903), qui ont comparé la répartition de l'indice céphalique et celle de la mortalité par cancer dans certains pays d'Europe[1].

6. A propos des différents types de comparaisons auxquelles l'immunité ou la réceptivité relatives des diverses races blanches à certaines maladies, et notamment au cancer, ont donné lieu, nous mentionnerons encore le problème israélite. Les Israélites sont assez souvent considérés, dans ces recherches de géographie et de statistique médicales, comme formant une « race » unique et distincte. En ce qui concerne le cancer, les « conclusions » seraient bien contradictoires puisque certaines enquêtes semblent établir que les Israélites accusent le plus haut pourcentage de cancer, tandis que d'autres concluent en leur attribuant une sorte d'« immunité »[2].

Les statisticiens hollandais, par exemple, qui ont spécialement étudié ce problème, inclinent à croire que les Israélites sont beaucoup moins frappés par le cancer que le reste de la population. En étudiant la répartition des décès par cancer dans les différents quartiers de la ville d'Amsterdam, ils auraient trouvé que plus il y a d'Israélites dans un quartier, moins il y a de décès par cancer, la composition par âge de la population israélite étant à peu près la même que celle de la population totale (sur 1.000 Israélites, 205 âgés de 45 ans et au-dessus; sur 1.000 individus de la population totale, 206; recensement de 1899)[3].

De même, Sanders, en examinant de nouveau ce problème pour la ville d'Amsterdam (1901–1913), aurait trouvé les chiffres suivants:

Nombre de décès sur 100.000 individus de chaque sexe:

	Israélites	Non-Israélites
Hommes	87,9	118,6
Femmes.	107,3	114,6

Ce serait donc surtout les Israélites hommes qui accuseraient une mortalité par cancer moins élevée[4].

III.

Défauts et lacunes de la documentation et des méthodes d'analyse en usage pour l'étude de l'existence possible d'un rapport entre la race et le cancer. Deux catégories de critiques:

1° d'ordre statistique — 2° d'ordre anthropologique.

A propos des observations et des « conclusions » dont nous venons de donner des exemples, nous ferons deux catégories de remarques qui peuvent s'étendre à toutes

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[1] « Münchener medicinische Wochenschrift » 38, 1920; et « Saint Bartholmew's Hospital Reports », XXXIX.

[2] Fr. L. Hoffmann: *op. cit.*, pages 147 à 151.

[3] J. J. Van Konijnenburg: *La mortalité par cancer à Amsterdam* (1862-1902). « Bureau municipal de statistique d'Amsterdam », Amsterdam, 1911, page 8. Voir aussi la *Statistique démographique de la Ville d'Amsterdam jusqu'à l'année* 1921, Amsterdam, 1923, page 231.

[4] Publications de la Section d'hygiène de la Société des Nations, C. H. 129 (1) Genève, 1923, page 13.

sortes d'observations et de « conclusions » du même genre. La première catégorie de nos remarques est d'ordre essentiellement *statistique*; la seconde, d'ordre essentiellement *anthropologique*.

Première catégorie:

1. A moins d'être appuyées par des statistiques correctes portant sur un grand nombre de cas, les observations de médecins qui ont pratiqué aux colonies, et parmi les populations de couleur, ne doivent servir qu'à titre d'indication et ne peuvent pas remplacer de véritables conclusions statistiques.

2. Il faut toujours dans ces cas, se demander si la portion de la population qui se trouve à « l'âge du cancer », c'est-à-dire 40 ans et au-dessus, est suffisamment nombreuse dans la population de couleur, celle-ci étant probablement moins riche en vieillards que les populations blanches parmi lesquelles les médecins en question ont passé la plus grande partie de leur vie. Il est vrai que certaines statistiques, comme celles des Etats-Unis d'Amérique, permettent de comparer les taux de mortalité par cancer, à chaque âge de la vie, chez les blancs et chez les hommes de couleur, et nous avons vu que ces derniers ont, en général, une mortalité cancéreuse inférieure à celle des blancs. Il est vrai aussi que certaines documentations statistiques présentent parfois la comparaison de la mortalité des blancs et des hommes de couleur sous forme de taux standardisés, ce qui élimine l'influence de la différence de composition par groupes d'âge de ces deux populations. Mais, à part la confiance à accorder aux taux de mortalité par cancer chez les nègres, pour les raisons que nous avons indiquées, dans la plupart des cas nous ne disposons pas d'une documentation suffisante sur la composition par âge des peuples primitifs ou sauvages. Nous n'avons que les observations des explorateurs et des médecins, qui répètent parfois les célèbres descriptions de Malthus; ou bien nous ne possédons que les données démographiques nord-américaines et anglaises, qui nous montrent qu'à chaque âge la durée probable de survie est très courte chez les Hindous et sensiblement moins longue chez les noirs que chez les blancs aux Etats-Unis [1].

3. Enfin, les règles élémentaires de la logique et la théorie des corrélations nous enseignent qu'il ne suffit pas de constater une covariation de deux variables — race et cancer — pour conclure à une relation de cause à effet. Les groupes humains qu'on compare entre eux diffèrent non seulement du point de vue de la race, mais aussi du point de vue de nombreuses variables: niveau de culture et de civilisation [2], alimentation, genre d'occupations, habitat au sens géographique du mot, qui se présentent très différemment dans chacun des groupes qu'on compare entre eux. Il pourrait y avoir corrélation « vraie » entre l'une de ces catégories (ou plusieurs d'entre elles) et le cancer, tandis que la corrélation entre la race et le cancer pourrait n'être qu'apparente.

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La seconde catégorie de nos remarques est d'ordre essentiellement anthropologique.

A part la remarque toute générale que la classification exacte des races (ou du moins celle que l'anthropologie proprement dite peut nous suggérer) est souvent oubliée de ceux qui s'occupent d'études sur la race et le cancer, nous ferons encore les observations suivantes:

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[1] J. W. Glover: *United States Life Table* (1890-1910), Washington, « Bureau of Census », 1921.

[2] Sur le sens exact et objectif que nous donnons au mot « civilisation » et sur les méthodes pour « mesurer » le degré de supériorité d'une civilisation, nous nous permettons de renvoyer le lecteur à notre ouvrage: *Les indices numériques de la civilisation et du progrès*, Paris, 1921.

1. On parle assez souvent, dans les études de géographie pathologique, de race nègre; mais il est évident que l'on confond parfois le véritable nègre (Guinéen, par exemple) avec d'autres populations africaines qui, tout en ayant la peau brune, très brune même, ne peuvent pas être qualifiées de nègres [1].

3. Le mot « colored » ou les mots « races de couleur » sont souvent employés pour désigner un ensemble de races les plus diverses que l'on oppose en bloc — dans ce genre de statistiques et d'observations sur le cancer — aux blancs, ou races blanches, considérées aussi en bloc. Or, que comprend le mot « colored » dans ces statistiques, par exemple dans les statistiques nord-américaines ? Comprend-il exclusivement les nègres ou embrasse-t-il aussi les mulâtres, les Japonais ou les Chinois ? Et même dans les cas où le Chinois, le Japonais, le « nègre », l'Indien de l'Amérique du Nord, etc., sont considérés séparément, pouvons-nous affirmer que chacun de ces groupes représente une race distincte ? Quelques-unes de ces remarques, du reste, avaient déjà été faites par Bordier lui-même; il faisait observer que si la mortalité par cancer des noirs des Etats-Unis était plus élevée que celle des noirs purs du Sénégal, c'était probablement parce que sous la dénomination de « noir », on avait compris aux Etats-Unis des mulâtres [2]. Que l'on pense aux différences morphologiques, pour ne pas parler des différences d'ordre psychique et de « milieu intérieur » — le milieu intérieur de Claude Bernard, dont la conception peut être modernisée par les idées toutes modernes sur les sécrétions internes — entre les noirs « purs » et les mulâtres, et l'on saisira toute l'importance de ces observations [3].

3. Il faut se rappeler, en troisième lieu, qu'il n'y a pas de pire confusion, dans les sujets que nous traitons, que celle qui consiste à prendre les noms de *peuples* pour des noms de *races* et à parler des peuples comme s'ils étaient des races [4]. Cette confusion, nous l'avons déjà dit, est fréquente, pour ne pas dire générale; il n'est donc pas possible de prendre une simple répartition de la mortalité par cancer dans les différents Etats, ou chez les différents peuples comme base de discussion sur le rapport probable entre la race et le cancer. C'est sous cette forme cependant que se présentent, le plus souvent, les statistiques officielles de la mortalité, et c'est sur ces documents que travaillent généralement ceux qui cherchent le rapport entre le cancer et la race. Un Etat, ou un peuple, n'est pas une race. Et même si, en étudiant la population d'un Etat ou d'un peuple, on tient compte de la répartition de la population en groupes désignés par des noms historiques: gréco-romains, celtes, sarmates, ligures, etc., ces noms ne correspondent pas à des races au sens biologique du mot, le seul que nous devons lui donner.

4. Il est tout aussi inexact de considérer les populations dites blanches comme un bloc; la chose est évidente, mais il y a lieu de faire observer que:

a) Il pourrait y avoir *unité biologique* ou, plus exactement *unité* (biologique) *d'espèce* entre certaines populations de peau blanche (les « leucodermiques » de Sergi) et d'autres

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[1] On trouvera une description des caractères morphologiques du nègre guinéen « considéré comme type nègre en général », dans le traité de P. Topinard: *L'Anthropologie*, 5me édition, Paris, 1895, page 503.

[2] A. Bordier, *op. cit.*, page 465.

[3] La question des mulâtres et du métissage a été traitée longuement ces derniers temps, mais on en trouve déjà une esquisse dans l'ouvrage de P. Broca: *Instructions anthropologiques générales*, Paris, 1879, 2me édition, au chapitre Croisements et métis, pages 202-214.

[4] Les ouvrages qui traitent avec précision ce problème ne manquent pas. On pourrait lire, entre autres: B. Auerbach: *Les races et les nationalités en Autriche-Hongrie*, Paris, 1898, Préface; A. van Gennep: *Traité comparatif des nationalités*, tome I, Paris, 1922, chapitre I; W. Z. Ripley: *The races of Europe*, New-York, 1899, chapitres I-II, et Carl Techet: *Völker, Vaterländer und Fürsten*, München, 1913, chapitre I.

dont la peau est brune et même très brune (les « melanodermiques » de Sergi); il est vrai que, d'après la théorie qui nous inspire cette réflexion, ces différentes colorations correspondent à des *variétés* (biologiques), mais l'*espèce* qui les embrasse serait unique l'espèce euro-africaine de Sergi, qui se subdivise en trois variétés: nordique, méditerranéenne, africaine [1].

b) Si l'on admet, d'autre part, qu'il existe une différence de race, ou, si l'on veut, de variété au sein même des populations dites blanches, il faudra recourir, pour arriver à ces répartitions biologiques-démographiques, à des indices anthropologiques objectifs, qui ne sont pas toujours — nous le verrons bientôt — ceux qui ont généralement été choisis jusqu'à présent pour ces recherches.

c) Un dernier mot enfin, à propos de ces observations d'ordre général, quoique nous abordions maintenant un sujet particulier: lorsqu'on parle d'une race israélite, on oublie parfois que les savants ne sont pas encore d'accord pour affirmer l'unité *anthropologique* de ce peuple. Notre éminent collègue, le professeur Pittard, par exemple, écrit à ce sujet que le « monde juif, pas plus en Europe qu'en Amérique, ne représente une race, au sens anthropologique du mot. Les Israélites constituent une puissante communauté religieuse et sociale, et parmi eux il y a de vrais Juifs, c'est-à-dire des Juifs de race, et de très nombreux judaïsés. N'oublions pas qu'à certaines époques, le prosélytisme juif fit entrer dans le groupe juif un nombre considérable d'individus appartenant à des races diverses [2].» Les anthropologistes, d'ailleurs, connaissent bien les travaux de von Luschan et de Weissenberg sur ce sujet. D'après von Luschan, les Israélites se composent de trois éléments bien distincts: l'élément amorrhéen (ou amorites) de la race *Homo europaeus*, dolichocéphale blond; l'élément hithite, c'est-à-dire brachycéphale, et l'élément sémitique, dolichocéphale brun, qui est le plus nombreux. Weissenberg ne partage pas entièrement cette manière de voir, mais il pense, lui aussi, que les Israélites de la Russie méridionale sont un peuple mélangé puisque leurs brachycéphales, qui présentent, en outre, certains caractères mongoloïdes, seraient des descendants convertis à la foi israélite de différentes peuplades du Caucase et des Khazars. Cette opinion est aussi celle de Ch. de Ujfalvy [3]. Les études, toutes récentes, de M^lle^ D^r^ Lipiec, inspirées de la méthode du « portrait parlé » sont aussi, il nous semble, une contribution à la théorie de l'hétérogénéité de la population juive [4].

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Les considérations que nous venons de faire sont des considérations d'ordre général et visent tous les types de raisonnement et de documentation appliqués jusqu'ici à la question du cancer dans ses rapports avec la race. Nous allons maintenant aborder une série de considérations d'ordre particulier.

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[1] G. Sergi, dans ses nombreux ouvrages, dont le dernier est: *Le prime e le più antiche civiltà*, Turin, 1926; voir notamment page 106.

[2] Eug. Pittard: *Etude sur la répartition géographique et ethnique du cancer*, « *Mémoires du Globe* », Genève, 1926, page 36 du tirage à part. Voyez aussi, du même auteur, le chapitre très documenté: *Les Juifs*, de son ouvrage *Les races et l'histoire*, Paris, 1924, où, après avoir montré l'hétérogénéité anthropologique de la population israélite, cet auteur écrit que « le véritable Juif originaire est probablement du type dolichocéphale assyroïde » (page 430.)

[3] F. von Luschan: « *Journal of royal anthrop. Institute* », XLI, 1911; S. Weissenberg, plusieurs études in « *Archiv f. Anthropologie* », 1909 et 1911 et in « *Zeitsch. f. Ethnol.* », 1907, 1912, 1913, etc.; Ch. de Ujfalvy, in « Atti della Soc. romana di Antropologia », 1904.

[4] D^r^ Lipiec: *Les différences de races chez les nouveau-nés polonais, juifs et suisses*. « Comptes rendus de la II^me^ session de l'Institut international d'anthropologie» (Prague), Paris, 1924, page 129.

IV.

Des difficultés que l'on rencontre en abordant l'étude d'un problème biologique ou social, du point de vue de la race.

Chaque fois que l'on cherche à étudier un problème donné du point de vue de la race, on rencontre des difficultés nombreuses, dont voici les plus importantes.

Tout d'abord il faut s'entendre sur le sens que l'on attribue au mot « race ». Nous avons déjà dit qu'il ne faut pas confondre *race* avec *peuple* ou *nationalité* — moins encore avec *Etat, langue, religion.*

Deuxièmement, même si l'on est d'accord — et il ne pourrait en être autrement — pour accepter le mot « race », dans son sens biologique, et dans ce sens exclusivement, une question assez délicate se pose: Quels sont les caractères visibles de la race ? Caractères susceptibles d'être traduits par des expressions exactes, précises, et même par des mesures ?

Troisièmement, en supposant ces caractères déterminés, il faut encore effectuer la répartition d'une population donnée d'après ces caractères, soit en se servant de la documentation déjà existante, soit en procédant à des observations directes. Or, assez souvent, la documentation existante est insuffisante; même dans certains pays européens, il existe de vastes îlots presque dépourvus de ce genre de documents et de données.

Quatrièmement, difficulté nouvelle et fort grave, les races ne se présentent pas sur la surface d'un territoire comme les carreaux d'un échiquier: elles sont enchevêtrées, et leur enchevêtrement peut se présenter de deux manières:

a) Des individus appartenant à une race bien déterminée sont éparpillés au milieu d'autres qui appartiennent à une autre race tout aussi bien déterminée. Le bloc comprenant les deux races présente donc un *pourcentage* de l'une et de l'autre race qu'il faudrait discerner et calculer. Est-ce toujours possible ?

b) Un groupe peut présenter des individus qui sont le produit de *croisements* de races diverses. D'après quel principe évaluera-t-on la qualité et la quantité de ces mélanges ?

En dernier lieu: supposons que nous possédions la documentation anthropologique relative à la distribution des caractères de race pour chaque zone (régions, provinces, etc.) d'un pays ou d'un Etat donné. Cette documentation peut se présenter sous plusieurs formes dont certaines sont presque inutilisables pour des comparaisons entre la géographie de la ou des races et la géographie d'une maladie quelconque. Cette documentation peut se présenter, zone par zone, sous forme:

1° de simple *moyenne arithmétique* pour chaque caractère,
2° de *pourcentages*,
3° de *sériations* pour chaque caractère, ou
4° de *tables à deux ou plusieurs variables.*

Ces différents types de documentation sont de valeur très inégale, ainsi que nous le montrerons bientôt.

V.

Qu'entendons-nous par race ? Quels sont les caractères de la race, visibles et susceptibles d'être traduits par des expressions précises ?

Nous avons dit qu'il faut entendre le mot « race » dans son sens biologique et dans ce sens exclusivement. Même dans son sens strictement biologique, ce mot sert dans le langage courant à indiquer les divisions et les subdivisions de la ou des grandes familles humaines; mais ces « races » ont-elles valeur d'espèces, de variétés ou de genres ? Il ne nous est pas possible de traiter ici cette question; qu'il nous suffise de l'avoir indiquée [1]. Nous nous arrêterons plutôt à d'autres indications fondamentales.

Pour affirmer, a-t-on écrit, que des individus appartiennent à une même race, à une même variété ou à une même espèce on doit se baser sur les considérations suivantes:

1° degré de ressemblance dans les caractères morphologiques et physiologiques;
2° degré de stabilité ou de constance de ces caractères;
3° degré de fertilité des unions à l'intérieur et à l'extérieur du groupe;
4° degré de communauté du sang, d'ascendance ou de parenté [2].

Il n'y a donc lieu de considérer ni la langue, ni la nationalité, ni aucun facteur de ce genre, pas plus que pour déterminer la variété ou l'espèce d'une fleur on ne s'occupe, et pour cause, de son langage.

Marcelin Boule a très bien écrit à ce sujet: « Il n'y a pas une race bretonne, mais un *peuple* breton; une race française, mais une *nation* française; une race aryenne, mais des *langues* aryennes; une race latine, mais une *civilisation* latine »... « Pratiquement on peut désigner sous le nom de races, les groupes humains qui présentent en commun certains caractères physiques choisis parmi les plus importants: stature; forme du crâne et de la face; couleur des yeux et des cheveux » [3].

Il vaut la peine de rappeler ici ce qu'écrivait Ripley à ce sujet: « Que faut-il entendre par race ? — :

« 1° des traits distincts;
« 2° l'association de ces traits en type;
« 3° le caractère héréditaire de ces types [4]. »

On appelle aussi les groupes humains ainsi constitués « types anthropologiques », de manière à éviter de se prononcer sur le point: race, variété, espèce, et on s'efforce de distinguer les types anthropologiques principaux des types anthropologiques secondaires.

Ceci dit, quels sont donc les caractères qui constituent le « signalement » de la race ?

Nous les passerons rapidement en revue, en prévenant le lecteur que quelques-uns d'entre eux ont été considérés comme fondamentaux et même uniques dans telle ou telle classification des races, tandis que d'autres n'ont été considérés que comme secondaires et accessoires.

La couleur de la peau a été considérée, pendant longtemps, comme un caractère fondamental et même unique de classification. On avait ainsi une race blanche, une race nègre, une race jaune et même une race rouge. Ces vieilles classifications réapparaissent parfois

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[1] Voir les différentes définitions dans le traité de P. Topinard: *L'Anthropologie*, 5me édition, Paris, 1895, page 195.

[2] Brajendranath Seal: *La signification des mots : race, tribu, nation*, « Mémoires sur le contact des races » publiés par G. Spiller, Londres, 1911, page 2.

[3] M. Boule: *Les hommes fossiles*, Paris 1921, page 321.

[4] W. Z. Ripley: *The races of Europe*, New-York, 1899, page 105.

dans certaines études de nos jours. Il ne faut pas oublier, cependant, que ces anciennes classifications, basées sur la couleur de la peau, subdivisaient les groupes ainsi formés: races blanche, noire et jaune, en sous-catégories; ainsi, par exemple, Cuvier, partant des trois races: blanche ou caucasienne, mongolique (jaune, jaunâtre) et nègre (la coloration rouge des Américains, disait-il, ne suffit pas à en faire une race à part), multipliait ensuite les subdivisions. Citons aussi la vieille classification de J. J. d'Omalius d'Halloy qui répartissait la « race » blanche en trois branches: européenne (blonde), aryenne (brune), scythique (roussâtre).

Il est vrai que quelques-unes de ces classifications, basées sur la couleur de la peau, prenaient aussi en considération certains autres caractères. Linnée, par exemple, répartit l'espèce *Homo sapiens* en quatre variétés: *Homo sapiens americanus*, au teint basané, aux cheveux noirs et longs, au menton imberbe; *Homo sapiens europaeus*, au teint blanc, cheveux blonds, yeux bleux.; *Homo sapiens asiaticus*, au teint jaunâtre, aux cheveux noirâtres et aux yeux bruns; *Homo sapiens afer*, au teint noir, aux cheveux noirs et crépus, au nez plat, aux lèvres épaisses, etc.

La forme des cheveux fut choisie à son tour comme critérium fondamental de la classification des races. Que l'on se rappelle les études sur l'examen microscopique de la coupe transversale des cheveux, du Dr Pruner Bey, les classifications de Bory de Saint-Vincent, d'Isidore Geoffroy de Saint-Hilaire, d'Huxley, d'Ernest Haeckel, et les études de Waldeyer [1]. Ce dernier, cependant, dut abandonner l'idée qu'il avait tout d'abord acceptée, qu'une classification des races peut reposer uniquement, ou essentiellement, sur la forme (et la couleur) des cheveux. On avait donc les groupes ou races d'hommes à cheveux lisses et plats, à cheveux ondulés, à cheveux crépus.

Mais c'est *la forme du crâne*, surtout d'après sa *norma verticalis*, sur laquelle Blumenbach attira l'attention des chercheurs, qui est depuis longtemps devenue le caractère fondamental de la classification des races.

Cette forme, si l'on considère particulièrement le *rapport* de la largeur à la longueur, est exprimée par l'indice céphalique qui, depuis Retzius (1842), a été généralement accepté par les anthropologistes [2]. On peut aussi, sans recourir à des mesures, classer les crânes d'après la forme du contour de la *norma verticalis* ou de Blumenbach; c'est la méthode de Sergi qui, comme on le sait, se sert surtout de la *norma verticalis* pour sa classification, dite morphologique [3].

Il était impossible de ne pas s'inspirer des mêmes principes qui avaient suggéré l'examen de la forme du crâne, pour les appliquer à l'examen de la face, d'où l'étude

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[1] W. Waldeyer: *Atlas der menschlichen und tierischen Haare*, ecc. Schauenburg, 1884.

[2] A. Retzius: *Ueber die Schädelformen*, etc., Stockholm, 1842, réédité in *Ethnologische Schriften*, Stockholm, 1864. D'après l'indice céphalique, la classification se fait ainsi: pour le crâne sec, *dolichocéphales*, indice de 75 et moins; *sous-dolichocéphales*, indice de 75,01 à 77,77; *mésaticéphales*, indice de 77,78 à 80; *sous-brachycéphales*, indice de 80,01 à 83,33; *brachycéphales*, indice de 83,34 et au-dessus (Broca). Pour les individus vivants (d'après Deniker), *dolichocéphales*, jusqu'à 77,99; *sous-dolichocéphales*, de 78 à 79,99; *mésaticéphales*, de 80 à 81,99; *sous-brachycéphales*, de 82 à 83,99; *brachycéphales*, de 84 à 85,99. On peut considérer aussi deux catégories extrêmes opposées: les *hyperdolichocéphales* (moins de 75,9 sur le vivant) et les *hyperbrachycéphales* (86 et au-dessus). D'autre part, on peut admettre, en général, que les formes *allongées* sont indiquées sur le crâne sec par les indices inférieurs à 80,01 et sur le vivant par les indices inférieurs à 82, tandis que les formes *arrondies* sont figurées par les indices supérieures à 80 et à 82. Nous aurons l'occasion de revenir sur ce point.

[3] G. Sergi, dans ses nombreux ouvrages. Voir par exemple *L'Uomo secondo le origini, l'antichità, le variazioni e la distribuzione geografica*, Turin, 1911. Il est utile de rappeler aussi la classification de l'anthropologiste américain: J. Aitken Meigs: *Observations upon the cranial forms*, etc., Philadelphia, 1866, qui a réparti les crânes américains originaires d'après leurs formes: *pyramidale, ovale, à forme de voûte, anguleuse*, etc. (pyramidal form, oval, arched, wedge shaped, flat, globular, square, prognatic). Dans la classification de Sergi, les crânes sont classés comme: *ellipsoïdes, ovoïdes, pentagonoïdes*, etc., *sphénoïdes, cuboïdes, platycéphales*, etc., les trois premiers adjectifs correspondant — dans la plupart des cas — à des *formes allongées*, les trois derniers à des *formes arrondies*. Voici, par exemple, une classification de 345 crânes italiens (siciliens et ligures) que Giuffrida-

de la *forme de la face*, d'après son contour, ce qui a conduit, d'une part, à la classification d'après la forme de ce contour (méthode strictement morphologique) et, d'autre part, à la classification d'après le rapport entre la largeur et la longueur de la face, ou indice facial (méthode anthropométrique) (Isidore Geoffroy Saint-Hilaire, Kollmann, Sergi).

De même, pour le nez, la *forme de l'ouverture nasale*, devient l'un des critériums et même parfois le critérium fondamental de la classification des races: nez leptorrhiniens, mesorrhiniens et platyrrhiniens (Broca, 1876).

N'oublions pas la tentative de Virey, qui s'efforça de classer les races d'après le degré d'ouverture de l'*angle facial* (1824), en s'inspirant de l'œuvre et des méthodes de Camper (1770).

La coloration de l'*iris* et des *cheveux* également a été prise en même temps que tel ou tel des caractères que nous venons de mentionner, comme l'un des signes de la race. On sait avec quel degré de précision (après les premières tentatives de Broca qui avait composé un tableau des 34 nuances de la coloration de la peau et du système pileux, et un autre des 20 colorations des yeux), on est arrivé aujourd'hui à exprimer par un attribut exact ayant parfois la rigueur d'une véritable mensuration, la coloration de l'iris, des cheveux, de la peau [1]. Malheureusement, les observations nombreuses qu'on a faites et qu'on fait à propos de la coloration des yeux, des cheveux et de la peau sont loin d'avoir toutes adopté les règles précises et les nomenclatures objectives auxquelles nous venons de faire allusion.

La *taille* aussi a été prise en considération (petite, moyenne, grande), etc.; on a cru pouvoir affirmer que ce caractère, sans être fondamental, pouvait néanmoins servir de signe plus ou moins accessoire pour la différenciation des groupes et des sous-groupes humains.

Lequel ou lesquels de ces différents caractères devons-nous, étant donné l'état actuel de nos connaissances, considérer comme le ou les caractères signalétiques de la race ?...

Ruggeri a faite d'après les méthodes de l'indice céphalique et de Sergi, « Atti della Soc. romana d'Antropologia », Roma (1907).

Formes	Indice céphalique								
	moins de 69,9	70-74,9	75-77,6	77,7-79,9	80,0-83,2	83,3-84,9	85,0-89,9	90 et plus	Totaux
Ellipsoïdes	6	56	23	18	14	1			118
Ovoïdes	—	16	36	25	33	1			111
Pentagonoïdes.	—	24	33	14	19	2			92
Sphénoïdes, cuboïdes et platycéphales	—	—	—	1	6	5	10	2	24
Totaux . .	6	96	92	58	72	9	10	2	345

On voit que la plupart des crânes ellipsoïdes, ovoïdes et pentagonoïdes se placent sous les indices inférieurs à 80 ou à 82, tandis que les crânes d'autres formes se rangent plutôt sous les indices de 80 et plus. Cependant une étude approfondie sur la corrélation entre les formes craniennes de Sergi et l'indice céphalique est encore à faire. Encore un exemple: sur 63 crânes anciens de l'île de Sardaigne, région foncièrement dolichocéphale, Sergi en a trouvé 27 ellipsoïdes; 15 ovoïdes, 9 pentagonoïdes et 12 appartenant aux autres formes sphénoïdes, platycéphales, etc.; or, les crânes des trois premières catégories présentaient des indices céphaliques oscillant entre 65 et 80 (dolichocéphales et sous-dolichocéphales, donc, ou *dolichomorphes*) tandis que pour les 12 crânes d'autres formes, les indices oscillaient entre 81 et 86 (voir « Atti della Soc. romana di Antropologia », Rome, 1907).

[1] Après les échelles colorimétriques de Broca, furent créées les échelles bien connues d'Alphonse Bertillon, de Fischer et de Martin, et d'autres encore. A. Bertillon créa une échelle, en 7 classes, de la colorimétrie de l'iris

On est enclin, de nos jours, à croire que la race se distingue non pas par l'un quelconque des caractères que nous venons d'indiquer, mais plutôt par l'*ensemble* de plusieurs de ces caractères, et qu'il faut surtout parler, en ce qui concerne le «signalement» de la race, d'une *subordination* de plusieurs caractères. C'est-à-dire qu'il faut choisir tout d'abord certains caractères qu'on estime être fondamentaux; chacun des groupes ainsi formés sera ensuite divisé en sous-groupes selon des caractères de moins en moins importants.

Cette idée de la subordination des caractères dans la classification des races est ancienne. Bradley déjà qui, en 1721, prenait comme caractère fondamental la couleur de la peau et partageait les hommes en blancs, noirs et intermédiaires, se servait également et en même temps de la forme des cheveux (droits ou laineux) pour subdiviser les noirs en deux catégories [1]. Retzius répartissait les hommes en *Gentes dolicocephalae* et *Gentes brachycephalae*; les unes et les autres étaient à leur tour réparties d'après le degré de proéminence ou d'aplatissement de la face (*prognathae* et *orthognathae*) [2]. Plus tard, P. Topinard prit comme caractère fondamental la forme du nez; il classait les caractères subordonnés dans l'ordre suivant: forme des cheveux, indice céphalique, coloration, taille, etc. [3]. D'autres répartitions fondées également sur la coordination et la subordination des caractères que nous avons indiqués ont été proposées.

Nous allons voir l'application de ces principes à la classification des races de l'Europe.

VI.

Suite du paragraphe précédent: Classification, selon la race, de la population européenne.

Dans cette étude, nos recherches sont nécessairement limitées aux populations sur lesquelles nous possédons, d'une part, des données raciales suffisantes et, d'autre part, des données démographiques concernant la mortalité par cancer. Nous commencerons

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et composa aussi une série de 38 échantillons de cheveux de différentes couleurs, allant du blond albinos au noir pur. Nous avons parlé ailleurs longuement de ces notations colorimétriques de A. Bertillon en en montrant l'exactitude, l'utilité, en donnant de nombreux exemples de leur application et en indiquant les erreurs qu'on commet et qu'on a toujours commises en se servant d'autres nomenclatures. Voir notre Mémoire sur l'étude statistique des caractères descriptifs de la physionomie humaine, in « Archivio di Antropologia criminale, Psichiatria e Medicina legale », Turin 1916-1917, où l'on trouvera aussi une bibliographie assez étendue. Voir aussi notre traité: *La méthode statistique et ses applications aux sciences naturelles, aux sciences sociales et à l'art*, Paris, 1925, page 559. Ch. Davenport, à l'aide d'une combinaison ingénieuse de disques coloriés, notait exactement, à l'aide de formules (par exemple N 54, R 34, Y 6, W 6, à savoir: proportion de noir 54, de rouge 34, de jaune 6, de blanc 6) la coloration de la peau, etc. Voir son étude: *Heredity of skin color in Negro-White Crosses*, Washington, 1913, où l'on trouvera aussi la nomenclature adoptée par cet auteur pour la coloration des yeux. Tout récemment, V. V. Bunak poursuivait à Moscou des enquêtes anthropologiques en partant du principe qu'il faut séparer nettement deux éléments dans l'appréciation des couleurs: la teinte et la clarté; il se servit pour la notation de la coloration des cheveux de l'échelle de Fischer et de l'appareil de spectométrie Kœnig Martens, qui rend possible la définition des coefficients d'absorption des ondes optiques de diverses amplitudes, c'est-à-dire de diverses couleurs par un corps coloré donné (cheveu); plus les coefficients d'absorption sont élevés, plus ceux de la dispersion sont bas et plus l'objet en question est sombre. (Le Mémoire de Bunak est publié en russe dans le Bulletin des naturalistes de Moscou, Section de biologie, tome I, 1924.)

[1] Dr Bradley: *A philosophical account of the works of Nature*, London, 1721.

[2] A. Retzius: *Ethnologische Schriften*, Stockholm, 1864.

[3] P. Topinard: *Eléments d'anthropologie générale*, Paris, 1885, page 502. *L'Homme dans la nature*, Paris, 1891, pages 56 et 57. Voici sa répartition des *leptorrhiniens* (nez étroit, populations dites blanches). La première subdivision, d'après l'indice céphalique, donne une première catégorie de dolichocéphales répartie à son tour en blonds, roux et bruns. Les dolichoblonds sont de grande taille (anglo-scandinaves), les roux aussi (finnois); les dolichobruns sont de petite taille (méditerranéens). La seconde catégorie est mésaticéphale et brune, de taille relativement petite (égyptiens, sémites). La troisième catégorie, brachycéphale, est répartie en bruns de petite taille (lapons, ligures) [?] et châtains de taille moyenne (celto-slaves).

donc par les populations européennes ou, plus exactement, par une partie des populations européennes [1].

Nous restons dans le cadre des problèmes indiqués au paragraphe IV de cette première partie comme formant les premières difficultés à surmonter avant d'entrer dans le vif de notre étude.

La répartition selon la race de la population européenne, basée sur la simultanéité des caractères et leur subordination, se faisait généralement jusqu'à tout récemment comme suit. On voyait l'Europe peuplée, d'après les indications (élaborées par Ripley), données par l'indice céphalique, la coloration, la taille, la forme du contour de la face, le nez, par les représentants de trois races:

1. *Homo europaeus;* 2. *Homo alpinus;* 3. *Homo mediterraneus.*

Le premier, *Homo europaeus*, est dolichocéphale. Sa face est allongée, ses cheveux blonds, ses yeux bleus, son nez mince et parfois légèrement aquilin. Il est de grande taille.

Le deuxième, *Homo alpinus*, est brachycéphale; sa face est plutôt ronde; ses cheveux sont de couleur châtain clair; ses yeux, gris ou noisette; son nez, plutôt large et parfois épais; il est trapu et de taille moyenne.

Le troisième, *Homo mediterraneus*, de même que l'*Homo europaeus*, est dolichocéphale; sa face est allongée; mais ses cheveux sont bruns ou noirs; ses yeux sont sombres. Quant au nez, Ripley et d'autres auteurs le décrivent comme plutôt large, tandis que certains le disent étroit, ou du moins oscillant entre le leptorrhynien et le mesorrhynien. La taille, enfin, est petite et parfois même très petite.

Il importe, pour éviter tout équivoque, de se rappeler les différents noms qui ont été donnés à chacune de ces trois races.

L'*Homo europaeus*, ou dolichoblond, correspond à la race *teutonique* de Ripley; au dolicholepte (dolichoïde et leptoprosope) de Kollmann; à la race ou homme de *Raihengraeber* des Allemands; à la race *germanique* des Anglais; à la race *kymrique* des Français; à la race *nordique* de Deniker. C'est la *variété nordique* de l'*espèce euro-africaine* de G. Sergi [2].

L'*Homo alpinus* ou brachycéphale est la race *celte*, ou *celto-slave* des Français et de quelques Italiens; la race *arverne* de Beddoe; la race *occidentale* ou cévenole de Deniker; c'est l'*espèce euro-asiatique (Homo eurasicus, spec.)* de Sergi.

L'*Homo mediterraneus*, ou dolichobrun, correspond à la race dite *ibérienne* par les Anglais; *ligurienne* par certains auteurs français et italiens; *ibéro-insulaire* et *atlanto-méditerranéenne* par Deniker; dans un certain sens, il correspond à l'*Homo meridionalis* de Lapouge. C'est la *variété méditerranéenne* de l'*espèce euro-africaine* de G. Sergi.

La division que nous venons d'indiquer est exposée aussi par M. Boule, à l'aide du tableau suivant:

Homo sapiens albus	dolicho	blond de grande taille:	*nordicus.*
		brun de petite taille:	*mediterraneus.*
	brachy	brun de petite taille:	*alpinus.*

[1] Voir W. Z. Ripley: *The Races of Europe*, New-York, 1899. J. Deniker: *Les Races et les peuples de la terre*, Paris, 1900 (2me édition 1925). A. C. Haddon: *The Races of Man and their Distribution*, Cambridge, 1924. E. Pittard: *Les races et l'histoire*, Paris, 1925. La classification adoptée par le professeur Pittard se rapproche beaucoup de celle de Deniker. Voir aussi la carte géographique européenne des trois races, dessinée par Madison Grant, à la page 272 de son ouvrage: *The passing of a great race*, New-York, 1919 *(present distribution of European races)*. On consultera avec profit cette carte sans accepter toutes les idées de l'auteur. D'autres ouvrages seront cités dans les pages qui vont suivre.

[2] Nous avons montré ailleurs, à l'aide d'une documentation abondante, les graves équivoques auxquelles on s'expose en réservant aux dolichoblonds le nom de «germaniques». Voir notre ouvrage: *Les Germains, histoire d'une idée et d'une «race»*, Paris, 1919.

Figure N° 1.

EUROPE.

*Répartition géographique actuelle de l'*Homo alpinus, *de l'*Homo nordicus *et de l'*Homo mediterraneus *d'après la carte dessinée par Madison Grant.*

Figure N° 2.

EUROPE.

Répartition géographique approximative de l'indice céphalique, d'après Ripley.

M. Boule fait aussi remarquer que, chez le *mediterraneus*, la face est longue et étroite, le nez plus large que chez le *nordicus* et souvent retroussé, la taille petite, le corps grêle, tandis que chez l'*alpinus*, la face est arrondie, le nez plutôt large, et le corps trapu [1]. Le critérium fondamental de classification serait, pour Boule, la pigmentation de la peau *(Homo albus)* et l'indice céphalique viendrait ensuite; il est évident que si

1 M. BOULE: *Les hommes fossiles*, Paris, 1921, pages 322 et suivantes. Voir aussi le cartogramme de la répartition des trois races en Europe, par cet auteur, d'après Ripley et Madison Grant, à la page 326 de son ouvrage.

l'on adopte d'autres systèmes de subordination des caractères, si l'on part, par exemple, de la forme du crâne, ou si l'on associe la forme du crâne et celles du nez et de la face, la coloration de la peau passe en troisième et même en dernière ligne; c'est le cas de la classification de Sergi, dans laquelle certaines populations très brunes du nord-est de l'Afrique, qu'il serait difficile de faire passer pour *Homo albus*, se classent à côté des populations du bassin méditerranéen européen. A remarquer aussi dans la description de Boule, l'indication: *grêle* ou *trapu* se référant à la masse du corps, je dirais même à la « constitution ». Cette indication avait été faite par plusieurs anthropologistes, notamment à propos de l'*Homo alpinus*, qui a été toujours décrit comme trapu. Nous aurons peut-être l'occasion d'attirer l'attention du lecteur sur ce point.

Cette classification en trois races a subi, depuis Ripley, et même à l'époque où il écrivait son traité, des remaniements et des modifications. Elle ne pouvait pas, d'ailleurs, ne pas être améliorée et certains détails demandaient à être approfondis; il fallait la rectifier, notamment en ce qui concerne la grande catégorie brachymorphe de l'*Homo alpinus*. Il est certain que cette catégorie est trop vaste et embrasse trop d'éléments ou de sous-catégories qu'il y aurait lieu de distinguer. « On est habitué — écrit Czekanowski — en traitant de l'anthropologie de l'Europe, à ne distinguer que trois types anthropologiques: le nordique, l'alpin et le méditerranéen. Cette thèse résulte des études sur l'anthropologie de l'Europe occidentale et ne peut pas être acceptée pour l'Europe centrale et orientale, les faits anthropologiques que présente cette partie de l'Europe ne trouvent pas d'explication si on se borne à ne distinguer que ces trois types anthropologiques » [1].

La classification de Deniker est, précisément, une tentative de rectifier et d'approfondir certains détails. Dans son grand ouvrage: *Les races et les peuples de la terre* (Paris, 1900), il admet l'existence: *a*) de dolichoblonds de grande taille ou race nordique; *b*) de dolichobruns de petite taille, ou race ibéro-insulaire; *c*) de brachycéphales bruns de petite ou moyenne taille, ou race occidentale, ou cévenole, ou celtique (ce sont les trois races dont nous avons parlé) et il ajoute à cette liste: *d*) des sous-brachycéphales blonds, de petite taille, ou race orientale (exemple: blancs-russiens); *e*) des mésocéphales bruns de grande taille ou race atlanto-méditerranéenne (exemple: espagnols de la côte et même certains exemplaires de la côte méditerranéenne française et italienne, où ils sont fortement mélangés à la race ibéro-insulaire; *f*) des brachycéphales bruns de grande taille, ou race adriatique ou dinarique (exemple: bosniaques).

Ces six races forment ce que Deniker appelle les races *fondamentales*. On peut les grouper dans le tableau suivant:

- Races européennes
  - *Brachymorphes*
    - *Sous-brachycéphales blonds* (exemple: Russie Blanche), *Homo orientalis.*
    - *Brachycéphales bruns de petite taille* (exemple: Auvergne, en France), *Homo alpinus.*
    - *Brachycéphales bruns de grande taille* (exemple : Bosnie), *Homo dinaricus.*
  - *Dolichomorphes*
    - *Dolichocéphales blonds de grande taille* (exemple : Scandinavie), *Homo nordicus.*
    - *Dolichocéphales bruns de petite taille* (exemple : Portugal), *Homo ibero-mediterraneus.*
    - *Mésocéphales bruns de grande taille* (exemple : Espagnols de la côte méditerranéenne), *Homo atlanto-mediterraneus.*

[1] J. Czekanowski: *Recherches anthropologiques de la Pologne :* « Bulletin de la Société d'anthropologie de Paris », séance du 4 mars 1920.

Nous voyons donc apparaître trois nouvelles races principales: l'orientale, la dinarique et l'atlanto-méditerranéenne. La première est de taille petite ou moyenne, sous-brachycéphale et blonde, d'un blond cendré (au lieu d'être brachycéphale brune ou presque comme *Homo alpinus*); on la trouve en Pologne et dans la partie orientale de l'Europe. La seconde, race dinarique, est brachycéphale également et brune, mais au lieu d'être de taille petite ou moyenne, comme le brachycéphale *Homo alpinus*, elle est de très grande taille et présente une figure grande, allongée, avec nez et mâchoire bien développés. Cette race s'étendrait sur la Bosnie, la Dalmatie et l'Istrie et étendrait ses ramifications sur l'Italie du nord et du centre, sur une partie de la France brachycéphale et sur quelques régions de l'ancien empire autrichien. Quant à la race atlanto-méditerranéenne, que l'on trouve surtout sur la côte sud de l'Espagne, elle se distingue du reste de la population méditerranéenne espagnole par une taille plus élevée et une moindre dolichocéphalie.

Les six races principales ou fondamentales de Deniker ne forment pas, d'après cet auteur, la totalité des races ou des « types » européens. Il y ajoute les quatre « variétés » suivantes:

a) Une race secondaire *sub-nordique*, blonde, qui se distinguerait de la race nordique par un nez retroussé et une moindre dolichocéphalie (Pittard se demande si cette moindre dolichocéphalie n'est pas plutôt apparente et due à un mirage produit par les moyennes arithmétiques) [1]; on trouverait cette race dans l'Allemagne du nord, en Finlande et sur la côte orientale de la Norvège.

b) Une race secondaire *vistulienne*, qui est accolée à la race orientale; elle est blonde, mais son crâne est moins arrondi que celui de la race orientale, et sa taille est plus petite. On la retrouve dans l'Europe orientale, chez les Polonais, par exemple.

c) Une race secondaire *nord-occidentale* sous-dolichocéphale et mésaticéphale, brune, de grande taille, qui est accolée à la race atlanto-méditerranéenne (nord-est de l'Irlande, Pays de Galles et même Belgique orientale).

d) Une race secondaire *sub-adriatique*, ou *sub-dinarique*, qui est accolée à la race principale dinarique, mais de taille moins élevée et présentant une moindre brachycéphalie. Elle a aussi les yeux et les cheveux moins bruns (Alsace-Lorraine, Autriche de langue allemande, Tyrol, et même nord-est de l'Italie).

Il s'agirait donc, selon Deniker, de six races principales (deux races blondes et quatre brunes) et de quatre races secondaires (deux de celles-ci se rattachant aux races blondes et deux intermédiaires entre les blonds et les bruns).

Lorsque la classification de Deniker fit son apparition, on fut enclin à croire tout d'abord que quelques-unes des nouvelles « races » indiquées par cet anthropologiste n'étaient que les variétés locales, sans grande importance. La race dinarique, par exemple, ne serait, d'après Ripley, qu'une variété de haute taille de l'*Homo alpinus*.

Plus tard, cependant, l'autonomie de la race dinarique trouva, et elle continue à trouver de nouveaux partisans. Ainsi, dans les publications récentes dont on peut discuter les idées fondamentales, mais qu'il est utile de connaître pour leur documentation, le nombre des races européennes a passé de trois à quatre: H Günther décrit, à l'aide de nombreux portraits, une race nordique, une race méditerranéenne, une race alpine et une race dinarique [2].

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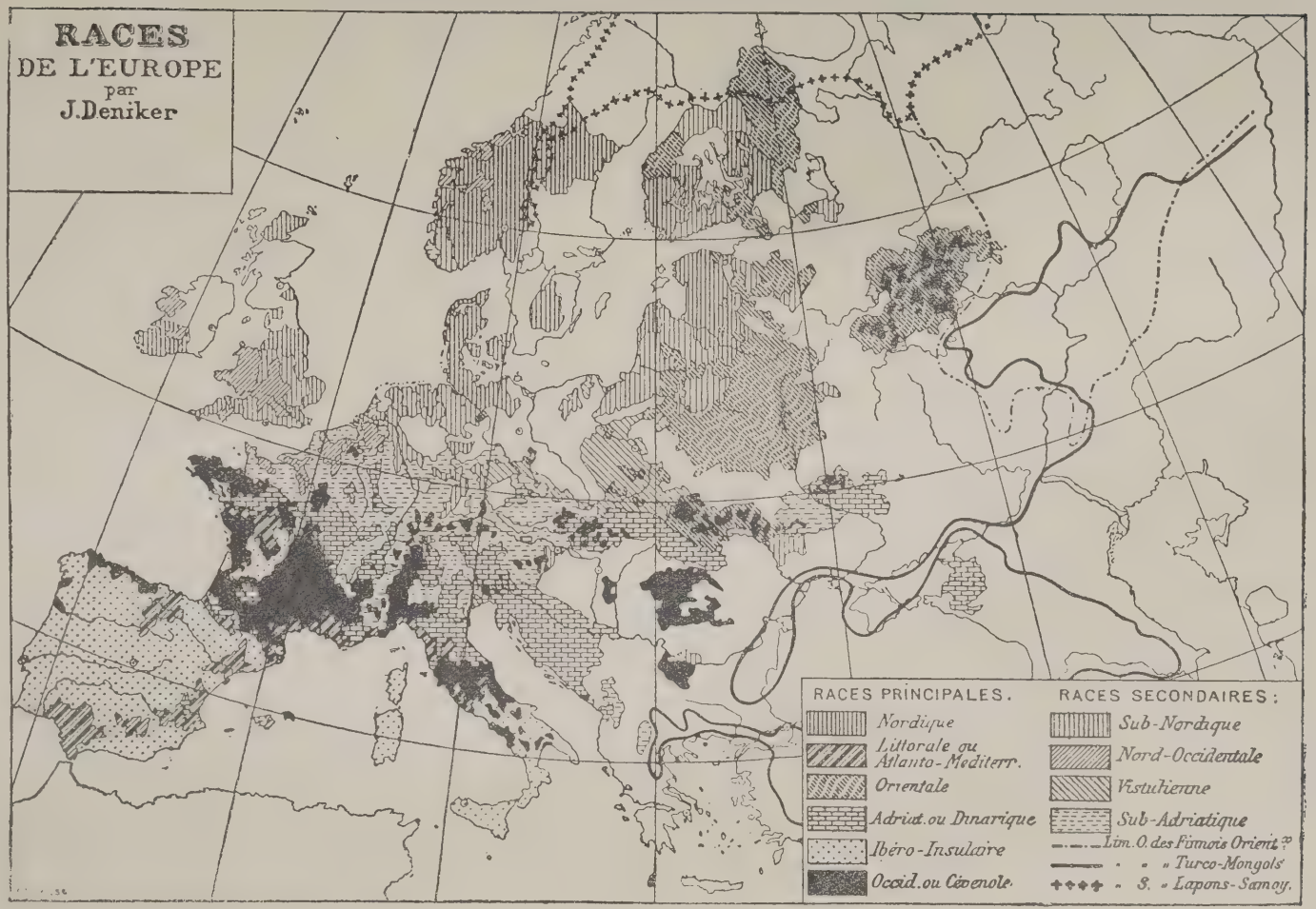
[1] Eug. Pittard, *op. cit.*, page 108.

[2] Dr H. Gunther: *Rassenkunde des deutschen Volkes*, dritte Auflage, München, 1923, pages 39, 73, 80, 101. Dans une nouvelle édition de son ouvrage (Munich, 1925), cet auteur accorde une cinquième place à la « race » brachycéphale blonde de la Russie occidentale (la race orientale de Deniker).

Figure N° 3.

EUROPE.

Répartition géographique des races, selon J. Deniker.



D'autre part, l'autonomie de la race orientale (de Deniker), trouve appui dans les nombreuses études des anthropologistes polonais, notamment de Czekanowski [1]. Cet auteur pense aussi qu'il faut reconnaître l'existence de la race secondaire de Deniker sub-nordique, qu'il aurait trouvée aussi en Pologne. Par contre, pour ce même auteur, une autre race secondaire de Deniker (race vistulienne) ne serait qu'une variante de la race orientale (de Deniker) [2].

On a aussi discuté l'autonomie de la race atlanto-méditerranéenne de Deniker. Ne serait-elle pas plutôt une variante de la race méditerranéenne ? Est-elle le résultat d'un croisement ? Faut-il la considérer comme une race autonome ?

Nous ne voudrions pas passer sous silence l'opinion de K. Stolykwo, directeur du Laboratoire d'anthropologie de Varsovie, sur la classification des races humaines, et particulièrement des races autres que les trois races classiques: *(Homo europaeus, alpinus, mediterraneus)*. Lui aussi, de même que Deniker, distingue des races, ou mieux: des « types anthropologiques » principaux (ou « fondamentaux »), et des types secondaires; ces derniers issus probablement du croisement des types fondamentaux et stabilisés, grâce à des facteurs inconnus. Il ajoute, cependant, qu'il est extrêmement difficile de décider actuellement quels sont, parmi les divers types anthropologiques, les types fondamentaux, et les types secondaires. La donnée essentielle pour une classification des types anthropologiques fondamentaux en Europe, serait pour lui la pigmentation, c'est-à-dire la couleur des yeux et des cheveux. D'où l'existence de deux types fondamentaux : *Homo nordicus*, et *Homo mediterraneus*. L'*Homo dinaricus* serait, par sa pigmentation, un troisième type, et pourrait de ce fait être mis au nombre des types fondamentaux de l'Europe. Mais on sent bien que cet anthropologiste est incertain sur ce point et qu'il incline parfois à ne voir dans l'*Homo dinaricus* qu'un type secondaire issu du croisement de l'*Homo nordicus*, de l'*Homo mediterraneus* et d'un autre type pur, fondamental lui aussi, brachycéphale, blond, de taille moyenne ou petite, aux yeux bleus, qu'il appelle *Homo fanobrachycéphale;* ce type correspond au brachycéphale blond de Deniker. Les autres types anthropologiques (y compris l'*Homo alpinus*), ne seraient que des types secondaires résultant du croisement du type clair avec le type foncé [3].

Il nous reste maintenant à parler de la classification de Giuffrida-Ruggeri et Biasutti, et de celle, très importante, de G. Sergi.

Giuffrida-Ruggeri, et Biasutti, considèrent entre autres, un *Homo sapiens « indo-europaeus »*, un *Homo sapiens « indo-africanus »*, un *Homo sapiens « asiaticus »*, etc. L'*Homo sapiens indo-europaeus* (espèce élémentaire), comprend deux variétés: *a) brachymorphus; b) dolichomorphus*. Ce que nous avons appelé *Homo alpinus* ne serait qu'une sous-variété de la variété *brachymorphus* de Giuffrida *(Homo sapiens indo-europaeus brachymorphus alpinus)*, et les deux types que nous avons appelés: *Homo europaeus* et *Homo mediterraneus*, ne seraient que deux sous-variétés de la variété *dolichomorphus (Homo sapiens indo-europaeus dolichomorphus nordicus*, et *Homo sapiens indo-europaeus dolichomorphus mediterraneus*) [4].

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[1] J. Czekanowski: *Recherches anthropologiques de la Pologne*, « Bulletin de la Société d'anthropologie de Paris », séance du 4 mars 1920, et *La détermination anthropologique*, etc., « Comptes rendus de la II^me^ session de l'Institut international d'anthropologie » (Prague), Paris, 1926, page 85.

[2] « Comptes rendus de la II^me^ session de l'Institut international d'anthropologie », Prague, déjà cités, page 89.

[3] K. Stolykwo: *Types fondamentaux et types secondaires en Europe* et *Nouvelle méthode d'analyse des types anthropologiques*, « Comptes rendus de la II^me^ session de l'Institut international d'anthropologie de Prague », déjà cités, pages 145-154.

[4] V. Giuffrida-Ruggeri: *Schema di classificazione degli « Hominidae » attuali*, « Archivio per l'Antropologia ecc. », Firenze, 1912. Voir aussi: R. Biasutti: *Studi sulla distribuzione* etc., « Memorie geografiche della Rivista geogr. italiana », Firenze, 1912. Le Mémoire de Biasutti, entre autres, est intéressant, parce qu'il s'efforce d'indiquer le caractère du développement et des proportions du corps humain chez les différentes « races ».

Quant à la classification de Sergi, nous avons déjà dit qu'elle se base essentiellement sur le profil du crâne vu d'en haut; les dolichomorphes du nord d'Europe et du bassin de la Méditerranée appartiennent à la même *espèce*, présentant des formes « ellipsoïdes », « pentagonoïdes » et « ovoïdes »; c'est l'espèce euro-africaine, divisée en trois variétés: *africaine, méditerranéenne, nordique*. Les brachymorphes d'Europe et d'Asie, par contre, appartiendraient à une autre espèce, l'espèce euro-asiatique, dont les crânes sont « sphénoïdes » et « platycéphales ».

La variété méditerranéenne, d'après Sergi, forme quatre branches: *européenne, égyptienne, lybique, indo-iranienne;* il y aurait également une branche latérale: *sémitique* [1]. Il s'ensuit que, en ce qui concerne l'Europe, l'espèce euro-asiatique de Sergi correspond, à peu près, à l'*Homo alpinus* de la classification en trois races, et que son espèce euro-africaine est représentée, en Europe par l'*Homo mediterraneus* et l'*Homo europaeus;* ces deux *Homo* constituent deux des trois variétés de la même espèce, la troisième étant la variété africaine.

En somme, les études sur la classification des types anthropologiques, si elles ne sont pas définitives, et si elles sont encore loin de présenter une parfaite unanimité d'opinions, sont cependant assez avancées. Nous répéterons avec Pittard: « Quelque précaires que soient de tels résultats, ils sont de nature à nous encourager. Ils nous ont montré que là où (dans la répartition des types anthropologiques en Europe), nous imaginions le chaos, il y avait un arrangement, et il y avait peut-être possibilité d'une classification [2]. »

Nous nous bornerons, dans cette étude, à une partie des populations d'Europe; à celles pour lesquelles, les statistiques anthropologiques, et les données relatives à la mortalité par cancer, ne font pas défaut. Malheureusement, l'état de la documentation statistique anthropologique dans les pays dont nous étudierons la mortalité cancéreuse, ne nous permettra, le plus souvent, de distinguer que les trois types anthropologiques classiques: *(Homo nordicus, mediterraneus, alpinus)*, et nous obligera à ne donner que de simples indications pour d'autres types, comme l'*Homo dinaricus*. Nous aurons du reste l'occasion de revenir sur l'état du matériel anthropologique.

VII.

Documents anthropologiques d'après lesquels on peut établir la répartition des races en Europe.

En passant en revue les divers types de difficultés que l'on rencontre au commencement même de ces études, nous disions (paragraphe IV) qu'il ne suffit pas d'être d'accord sur le choix des caractères qui forment le signalement de la race; il faut, en outre, si l'on veut effectuer la répartition de la population d'après certains caractères de race, posséder une documentation abondante et sûre, une véritable documentation anthropo-statistique.

Les documents que l'anthropologie a mis jusqu'aujourd'hui à notre disposition au sujet de l'indice céphalique, de la coloration, de la taille, etc., en Europe sont-ils assez

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[1] G. Sergi: Ouvrages nombreux. Voir le plus récent: *Le prime e le più antiche civiltà*, Turin, 1926 pages 53-55.

[2] E. Pittard, *op. cit.*, page 112. Nous étions occupé à relire et à corriger ces pages, lorsque la revue « Anthropologie », de Prague, publia un long article de son savant directeur, le professeur J. Matiegka, sur les tentatives faites jusqu'à ce jour pour classifier les races humaines. Numéro III, 3, 1925, article signé J. M. Cet article est écrit en tchèque, mais il est suivi d'un court résumé en français.

nombreux pour permettre un travail sérieux, sinon pour l'Europe entière, du moins pour une grande partie de ce continent ? Il suffit de rappeler les grands travaux synthétiques de géographie anthropologique de Ripley, de Deniker et d'autres auteurs et l'ouvrage tout récent d'E. Pittard, pour être tenté de répondre affirmativement à cette question. Il suffit encore de mentionner l'ouvrage classique de Martin, les nombreux travaux de Sergi qui, peu à peu, ont tracé la géographie européenne et même extra-européenne des différentes variétés humaines, surtout d'après la *forme* du crâne: *ellipsoïde, pentagonoïde ovoïde* ou crânes dolichomorphes de l'espèce euro-africaine, d'une part, *sphénoïdes* et *platycéphales* ou crânes brachymorphes de l'espèce euro-asiatique, d'autre part. Il suffit aussi de penser à la grande quantité de travaux et d'enquêtes anthropologiques ou anthropostatistiques approfondis sur la question des races dans tel ou tel pays d'Europe, ou dans telle ou telle zone même très restreinte. Tous les anthropologues connaissent l'abondance des matériaux qui nous ont été fournis: pour l'Espagne et le Portugal, par Oloriz et Mendes Correa; pour la France, par Alph. Bertillon, Collignon, etc.; pour l'Italie, par l'anthropométrie militaire du médecin-major Livi; pour l'Allemagne, par von Hölder, Virchow, Kollmann, O. Ammon; pour l'Angleterre, par Beddoe; pour la Hollande, par Bolk; pour la Belgique, par Houzé; pour la Bohême, par Matiegka, etc.

Cependant, ces matériaux très riches, s'ils sont plus que suffisants pour donner une idée d'ensemble de la géographie des races, — et parfois bien plus qu'une simple idée d'ensemble, — ne nous permettent pas toujours d'approfondir certains problèmes. C'est le cas lorsque la documentation anthropométrique ne se présente que sous forme de *moyennes* arithmétiques pour chaque caractère, alors qu'il serait utile ou nécessaire de la posséder sous forme de *sériations*, de *pourcentages* ou de *tableaux* à *deux* ou à *trois variables*.

Nous allons voir la valeur de cette observation pour notre étude, et nous ferons quelques remarques assez importantes sur la coexistence et le mélange de ces différentes races dans les différentes zones. C'est le problème que nous avons signalé plus haut comme l'une des difficultés auxquelles on se heurte dès le commencement de recherches de ce genre.

VIII.

Méthode de la sériation ou des pourcentages tirés d'une sériation pour reconnaitre la présence et la fréquence de diverses races vivant ensemble sur le même territoire.

Les différents types, ou races — *Homo alpinus, europaeus, mediterraneus*, — que nous avons décrits, peuvent parfois se trouver entremêlés dans la même zone, ou unité territoriale (province, région, etc.). Si les données anthropométriques dont nous disposons ne nous donnent que la valeur *moyenne* de tel ou tel caractère, il nous sera assez difficile de fixer le pourcentage de chaque type dans cette zone. Par contre, ce calcul sera possible si les valeurs de chaque caractère sont indiqués non pas par la moyenne, mais par la *sériation*. On voit donc que les documents fournis par les statistiques anthropologiques sont de valeur très inégale. Les statistiques anthropologiques européennes sont assez nombreuses, mais, à la rigueur, on n'en pourrait utiliser qu'une faible partie parce qu'elles ne nous offrent, le plus souvent, que des *moyennes*.

Un exemple servira à expliquer l'application de la méthode des sériations au dépistage du pourcentage des différentes races dans une zone donnée.

Arrêtons-nous un instant à l'étude de l'indice céphalique sur le vivant (indice céphalométrique); nous possédons les mensurations faites par Oloriz sur plusieurs centaines

d'individus, dans deux régions de l'Espagne: les régions cantabrique et valencienne [1] Les moyennes arithmétiques nous donnent le tableau suivant:

Indice céphalique (sur le vivant) de deux régions de l'Espagne (d'après Oloriz).

Région cantabrique [2]	80,1
Région valencienne [3]	76,9

En admettant (ce qui n'est pas improbable), que les crânes dolichoïdes, en Espagne, appartiennent à l'*Homo mediterraneus* et les crânes brachymorphes à l'*Homo alpinus*, nous pourrons déduire de ce tableau que ces deux régions sont peuplées en grande majorité par des représentants de l'*Homo mediterraneus*, mais que, très probablement, la région valencienne en compte beaucoup plus que la région cantabrique. En effet, l'indice céphalique moyen de la première est inférieur (76,9) à celui de la région cantabrique (80,1) (Oloriz, page 143 [4]). Ce renseignement est bien vague et, dans certains cas, lorsque la différence entre les deux moyennes est minime, toute conclusion est assez incertaine. Nous avons besoin de plus de précision et nous pourrions y atteindre si nous possédions à côté de chaque moyenne arithmétique, la sériation de laquelle la moyenne a été tirée. Voici, en effet, les deux sériations (Oloriz, pages 149 et 150) que nous exposons en groupant les indices céphaliques par groupes de deux unités.

Sériation de l'indice céphalique (sur le vivant) dans deux régions d'Espagne (d'après Oloriz). Nombre de sujets en pour-cent.

Indices céphaliques [5]	Région cantabrique	Région valencienne
66–67	—	0,20
68–69	0,21	0,40
70–71	0,21	2,38
72–73	2,81	9,16
74–75	8,43	25,29
76–77	18,36	30,70
78–79	18,58	20,52
80–81	22,68	7,57
82–83	13,82	3,58
84–85	6,27	0,20
86–87	4,32	—
88–89	3,24	—
90–91	0,86	—
92–93	—	—
94–95	0,21	—
Nombre de sujets . .	100,00	100,00

[1] Nous nous servons ici des chiffres du travail de F. Oloriz: *Distribución geográfica de índice cefálico en España*, Madrid, 1894, pages 143 et suivantes.

[2] Lugo, Oviédo, Santander.

[3] Castellón, Valence, Alicante.

[4] Nous rappelons que les crânes *dolichomorphes* correspondent aux crânes dolichocéphales proprement dits, sous-dolichocéphales et mésaticéphales qui ont des indices céphaliques inférieurs à 80 sur le crâne sec et probablement à 82 (jusqu'à 81,99) sur le vivant. Les crânes à indices supérieurs sont *brachymorphes*, c'est-à-dire sous-brachycéphales et brachycéphales. Cette répartition est simplement approximative là où l'on opère la division à l'indice 80,00 (ou 81,99). Il faut aussi ajouter que quelques anthropologistes croient pouvoir affirmer que les crânes mésaticéphales (77,78 à 80 sur le crâne sec et de 80 à 81,99 sur le vivant) sont plutôt le résultat du croisement des dolicho avec les brachy que des vrais dolichomorphes. Voyez, par exemple, V. Giuffrida-Ruggeri: *Sulla plasticità delle varietà umane*, « Monitore zoologico italiano », Firenze, 7, 1903. Néanmoins, les formes des crânes mésaticéphales sont les mêmes, en général, que celles des crânes dolichoïdes (d'après la méhode de Sergi), ce qui indique qu'on ne commet peut-être pas une grave erreur en classant parmi ceux-ci les mésaticéphales.

[5] Lire ces indices de la manière suivante: de 66 à 67,99; de 68 à 69,99, etc.

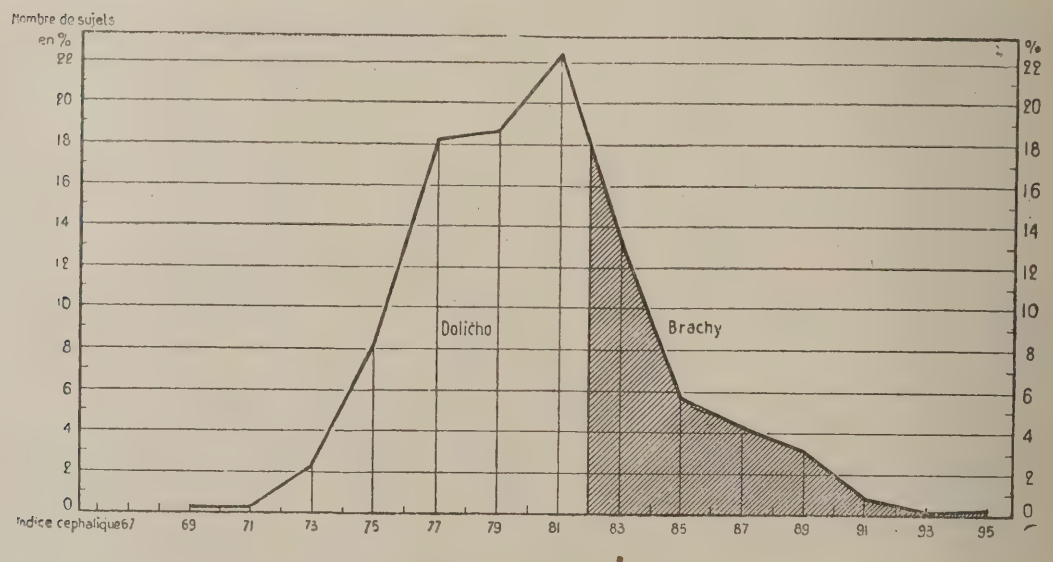
Si nous admettons que les crânes dolichomorphes sont ceux dont l'indice céphalique — sur le vivant — est inférieur à 82, les crânes à indice supérieur étant brachymorphes, et que, en Espagne, les dolichomorphes appartiennent à l'*Homo mediterraneus* et les brachymorphes à l'*Homo alpinus*, il nous est facile de constater, par les deux sériations, que 29 % des habitants de la région cantabrique appartiennent au type *alpinus*, tandis que cette proportion tombe à 4 % environ dans la région valencienne (Voir les figures Nos 4 et 5).

Figure No 4.

Exemple du calcul du pourcentage de crânes brachymorphes dans une région, d'après la sériation de l'indice céphalique (sur le vivant) dans cette région.

RÉGION CANTABRIQUE (Espagne).

La partie couverte de traits représente les crânes brachymorphes, la partie en blanc représente les crânes dolichomorphes.



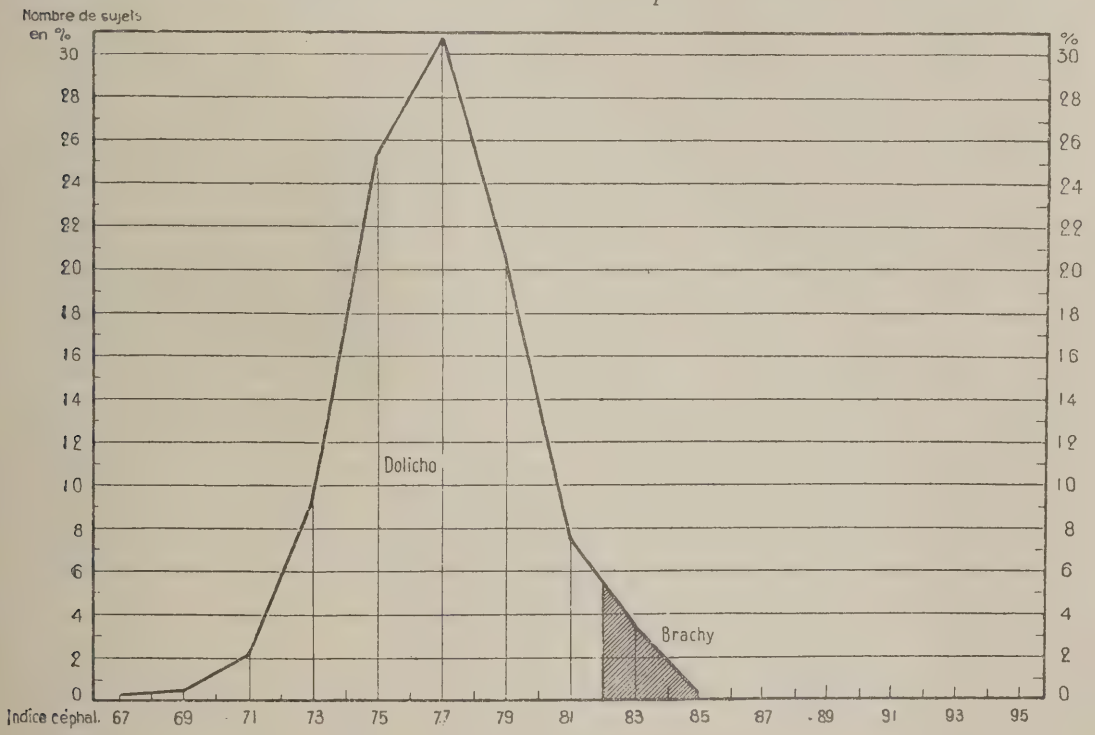
Lorsque le matériel statistique anthropologique se présente sous forme de sériations, l'étude anthropologique de la zone et sa comparaison avec d'autres zones sont singulièrement facilitées. Dans le cas des deux régions que nous venons de comparer, les sériations nous permettent de calculer non seulement le pourcentage des types *alpinus* ou autres mais aussi l'erreur probable de chacune des deux moyennes, l'indice de variabilité de chaque sériation et, par là, le degré d'hétérogénéité de la population de chacune de ces deux régions.

Figure N° 5.

Exemple du calcul du pourcentage de crânes brachymorphes dans une région, d'après la sériation de l'indice céphalique (sur le vivant) dans cette région.

RÉGION VALENCIENNE (Espagne).

La partie couverte de traits représente les crânes brachymorphes ; la partie en blanc représente les crânes dolichomorphes.



En calculant, par exemple, l'indice de variabilité

$$\sigma = \sqrt{\frac{\Sigma x^2}{n}}$$

d'après les deux sériations ci-dessus, on obtient un indice de 3,84 pour les crânes de la région cantabrique et de 2,68 pour ceux de la région valencienne: ce qui indique que la variabilité du lot examiné dans la première de ces deux régions est plus élevée que celle du lot de la deuxième région. En d'autres termes, la sériation que fournit la première région accuse un degré d'hétérogénéité plus élevé que celle de la seconde. Cette différence persiste même lorsqu'on procède pour la région cantabrique à ce qu'on appelle l'expulsion des données extrêmes, c'est-à-dire de ces données qui, dans la sériation, viennent se placer après que les « fréquences » de la sériation descendent à zéro. Ici, il s'agirait d'expulser les crânes (0,21 pour 100) qui tombent sur l'indice céphalique de 95 et qui pourraient être considérés dans un certain sens, d'après la méthode d'expulsion dite graphique, comme présentant un caractère pathologique. Or, même en expulsant cette donnée extrême, l'indice de la variabilité de la sériation en question devient 3,78 et il reste plus élevé que celui de l'autre sériation.

IX.

SUITE DU PARAGRAPHE PRÉCÉDENT: — MÉTHODE DES TABLEAUX À PLUSIEURS VARIABLES.

Un mot encore au sujet de la méthode à suivre pour « compter » les représentants d'une race donnée dans une région donnée, de manière à pouvoir comparer la composition ethnique de chaque région et la répartition géographique de tel ou tel phénomène démographique.

Nous avons indiqué les différents caractères de chaque race: crâne, face, coloration, etc. Généralement, les statistiques anthropologiques relatives à la répartition géographique de ces caractères dans les zones d'un pays donné indiquent simplement la moyenne ou la sériation de *chaque* caractère dans chaque région, c'est-à-dire que la documentation anthropo-statistique se borne généralement à indiquer, pour chaque région, la moyenne de la taille (ou la sériation), celle de l'indice céphalique, etc.

C'est sans doute quelque chose. Mais pour nous comme pour les anthropologues eux-mêmes, ce n'est pas suffisant. La sériation *pour chaque caractère* isolé est insuffisante; il faudrait des tables à deux, trois, etc., variables, car nous avons besoin de savoir combien d'individus, dans chaque région, réunissent un certain nombre de caractères, par exemple, grande taille, cheveux blonds, crâne dolichomorphe et yeux bleus, ou petite taille, cheveux bruns, yeux foncés, crâne dolichomorphe, etc. Ce type de documentation (tables à deux, trois, etc., variables) est bien différent de l'autre (sériation), qui pourtant constitue déjà un progrès sur la documentation d'il y a cinquante ans, qui se réduisait à une simple moyenne arithmétique. Cette documentation plus complexe est assez rare.

Voici un exemple de table à deux variables. Elle nous indique, pour un pays tout entier, l'Italie, le nombre d'individus qui réunissaient les caractères: taille déterminée et coloration de cheveux déterminée (soldats de 20 ans, *Antropometria militare* du Dr Livi, médecin-major, tome 1er, Rome 1896, page 287).

Notation simultanée de deux caractères anthropologiques: taille et couleur des cheveux. (Soldats italiens — Italie tout entière, total de 299.066 sujets.)

Couleur des cheveux	Taille				
	inférieure à 1,60	de 1,60 à 1,65	de 1,65 à 1,70	de 1,70 et au-dessus	Totaux
Rouge . .	271	536	543	370	1.720
Blonde . .	3.825	8.305	7.451	4.992	24.573
Châtaine .	32.546	62.688	52.448	32.194	179.876
Noire . . .	17.864	33.011	26.871	15.151	92.897
Totaux. .	54.506	104.540	87.313	52.707	299.066

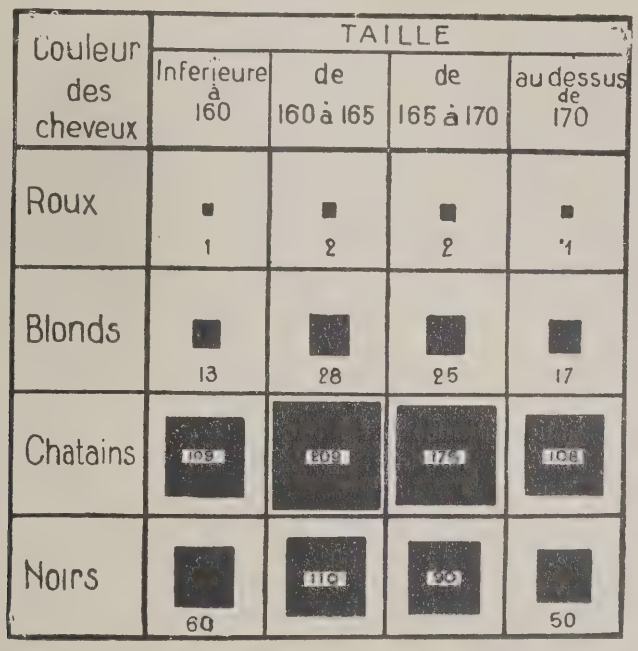
On voit aisément par ce tableau que sur 299.066 Italiens, 17.864 — c'est-à-dire le 6 % environ — réunissaient les caractères suivants: taille très petite (inférieure à 1 m. 60) et cheveux noirs; 50.875 — c'est-à-dire à peu près le 17 % de la population examinée —

(17.864 + 33.011) avaient à la fois des cheveux noirs et une taille inférieure à 1 m. 65 et ainsi de suite. (Voir la traduction graphique du tableau à la figure 6.)

Figure N° 6.

Exemple d'un tableau à deux variables indiquant simultanément combien d'individus d'une population donnée ont une taille déterminée et une coloration des cheveux déterminée.

Traduction graphique du tableau précédent.
(Chiffres proportionnels, les 299.066 soldats de l' « Antropometria militare italiana » *étant ramenés à 1000.)*



Il est facile d'observer, d'après ce genre de tableaux, si les deux variables considérées (coloration et taille) s'associent suivant les lois du calcul des probabilités, ou s'il existe entre elles une véritable attraction ou une véritable répulsion; si, par exemple, la couleur rouge des cheveux s'associait à la taille très petite (moins de 1 m. 60) suivant les lois du calcul des probabilités, nous devrions trouver dans le carré des individus présentant simultanément des cheveux roux et une taille inférieure à 1 m. 60, 313 individus $\left(\frac{1.720}{299.066} \times \frac{54.506}{299.066} \times 299.066 = 313\right)$. Nous n'en trouvons, par contre que 271; il y a lieu de croire, les fréquences théoriques étant supérieures aux effectives, qu'il y a *répulsion* entre ces deux caractères. De même, pour l'association des caractères: cheveux blonds et très petite taille, la fréquence théorique est de 4.479, tandis que la fréquence effective n'est que de 3.825; il y aurait donc *répulsion*. Par contre, l'association des caractères: taille très petite et cheveux noirs donne une fréquence théorique de 16.931 alors que la fréquence effective est de 17.864, il y a lieu de croire qu'il y a *attraction* entre les caractères: cheveux noirs et taille très petite. L'association effective entre le caractère cheveux blonds et grande taille (1 m. 70 et plus) est de 4.992; l'association théorique n'est que de 4.331;

il y a donc *attraction* entre ces deux caractères. Et ainsi de suite. Ce mode de calcul met assez bien en évidence la « préférence » qu'ont certains caractères anthropologiques, dans un groupe donné d'individus, à coexister ou à s'associer entre eux.

Les renseignements simultanés dont nous venons de parler, sont donnés par l'*Antropometria militare italiana* pour chacune des 16 régions italiennes. Voici quelques exemples pour quatre seulement de ces régions:

Répartition géographique des sujets réunissant les caractères suivants: taille très petite (inférieure à 1 m. 60) et cheveux noirs, en Italie; soldats italiens.

Piémont	1.187	sur	33.522	soit environ		4 %
Vénétie	682	»	28.472	»	»	2 %
Sicile	2.975	»	32.806	»	»	9 %
Sardaigne	1.193	»	6.685	»	»	18 %

On voit immédiatement que l'association des caractères: taille très petite et cheveux noirs est assez fréquente en Sicile et en Sardaigne, et qu'elle ne se trouve presque pas dans le Piémont ou la Vénétie.

Les tables à deux variables, soit dit entre parenthèses, sont du plus grand secours pour l'examen anthropologique d'une population, puisqu'elles permettent le calcul d'un rapport ou d'un coefficient de corrélation ou de « contingence », selon les cas, qui mesure le degré d'association entre les deux variables choisies.

Encore un exemple de ce genre de documentation statistique donnant simultanément deux ou trois caractères de race pour chaque individu: les enquêtes suédoises du Dr H. Lundborg. Cet auteur commence par fixer les quatre caractères du « type nordique pur »:

1° dolichocéphalie indiquée par un indice céphalique inférieur à 75;
2° taille supérieure à 1 m. 699;
3° coloration claire des yeux;
4° coloration claire des cheveux.

Il fixe aussi les caractères du « type suédois »; ce sont ceux que nous venons de décrire à ceci près qu'ils comprennent les crânes à indice céphalique allant jusqu'à 80 (au lieu de 75). Lundborg recherche ensuite combien d'individus, dans chaque province suédoise, réunissent les quatre caractères en question; il trouve que dans la Suède tout entière le type « pur » est présenté par 11 % de la population, et le type « suédois » par 29 %. Chaque province présente un pourcentage qui va, pour le type pur, de 7 % à 18 %, et pour le type suédois de 23 à 41 % [1].

La limite des crânes dolichomorphes aurait pu, à notre avis, être portée à 82 (81.99), puisqu'il s'agit de mensurations prises sur le vivant; le pourcentage du type « suédois » aurait ainsi été un peu élevé.

Mais ceci n'enlève d'ailleurs rien à la valeur de l'excellent document que nous venons de mentionner.

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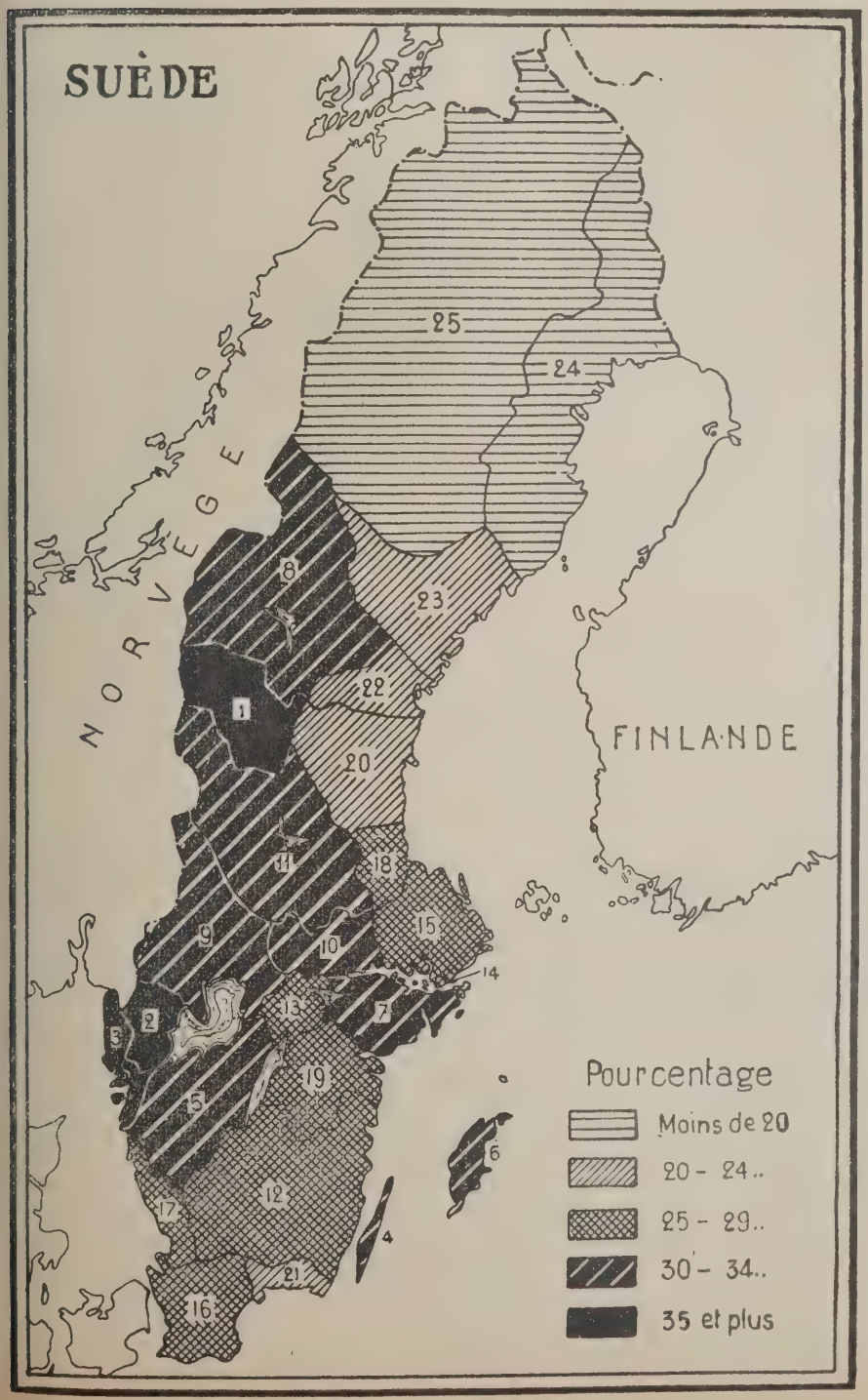
1 H. Lundborg: *The more important racial elements that form a part of the present Swedish nation*, « *The Swedish nation* », Stockholm, 1921, page 24. On pourrait aussi rappeler ici les enquêtes de Czekanowski, que nous avons déjà eu l'occasion de citer, sur la population polonaise. Après avoir désigné par α l'*Homo nordicus*, par ω l'*Homo alpinus*, par β l'*Homo orientalis* (de Deniker), par γ un type anthropologique brachycéphale blond de grande taille, par δ l'*Homo dinaricus*, cet auteur détermine pour chaque district ou pour chaque gouvernement: *a*) quel est le type le plus fréquent; *b*) quel est celui qui se classe deuxième par ordre de fréquence; *c*) quel est celui qui se classe troisième. Par exemple, pour le district de Plonsk: premier type α, second type β, troisième γ; pour la Ruthénie blanche occidentale, β, γ, α, etc. « Bulletin de la Société d'anthropologie de Paris », 1920, déjà cité.

Figure N° 7.

Exemple d'un cartogramme indiquant la répartition d'individus caractérisés par plusieurs caractères à la fois; indice céphalique jusqu'à 80; taille de 1 m. 70 et plus; yeux clairs; cheveux clairs; chaque individu examiné présentant à la fois ces quatre caractères. — Type suédois *de Lundborg.*



Pourcentage de ce type dans chaque province de la Suède.

Provinces	%
1. Härjedalen . .	41,4
2. Dalsland . . .	36,1
3. Bohuslän . . .	35,0
4. Öland	34,6
5. Västergötland .	33,7
6. Gotland. . . .	33,7
7. Södermanland.	33,5
8. Jämtland . .	32,2
9. Värmland. . .	31,6
10. Västmanland .	31,2
11. Dalarna . . .	31,1
12. Småland . . .	29,9
13. Närke	28,32
14. Stockholm. . .	27,9
15. Upland. . . .	27,3
16. Skåne.	26,9
17. Halland. . . .	25,6
18. Gästrikland . .	25,4
19. Östergötland .	25,1
20. Hälsingland. .	24,6
21. Blekinge . . .	24,4
22. Medelpad. . .	23,6
23. Angermanland.	22,6
24. Västerbotten, Lappland. .	17,0

Exemple de pourcentages indiquant la répartition d'individus caractérisés par plusieurs caractères à la fois : indice céphalique jusqu'à 80 ; taille de 1 m. 70 et plus ; yeux clairs ; cheveux clairs ; chaque individu examiné présentant à la fois ces quatre caractères. Type suédois *de Lundborg. Pourcentage de ce type dans chaque province de la Suède.*

	Provinces	%		*Provinces*	%
1.	Härjedalen	41,4	13.	Närke	28,3
2.	Dalsland	36,1	14.	Stockholm	27,9
3.	Bohuslän	35,0	15.	Upland	27,3
4.	Öland	34,6	16.	Skåne	26,9
5.	Västergötland	33,7	17.	Halland	25,6
6.	Gotland	33,7	18.	Gästrikland	25,4
7.	Södermanland	33,5	19.	Östergötland	25,1
8.	Jämtland	32,2	20.	Hälsingland	24,6
9.	Värmland	31,6	21.	Blekinge	24,4
10.	Västmanland	31,2	22.	Medelpad	23,6
11.	Dalarna	31,1	23.	Angermanland	22,6
12.	Småland	29,9	24.	Västerbotten, Lappland	17,0

Quoi qu'il en soit, nous nous permettons d'insister sur cette question de méthode. Elle est fondamentale pour des études de ce genre. Il nous faut, pour chaque caractère, non pas des moyennes arithmétiques, mais des sériations ; et cela pour chaque zone ; il nous faut, en outre, des tables à plusieurs variables pour chaque zone. Nous verrons qu'il ne nous sera pas facile de remplir ces conditions préalables, mais nous tâcherons de nous servir quand même des documents parfois assez incomplets que la géographie anthropostatistique actuelle nous fournit. (Voir figure 7 à la page précédente.)

X.

Suite des deux paragraphes précédents : Mélange de races dans le cas de « métissage ».

Une autre remarque sur un problème sensiblement plus compliqué que celui que nous venons d'exposer : Les caractères de chacun des différents types — *europaeus, alpinus, mediterraneus,* etc., — sont les caractères des types *purs*. On peut trouver les types purs ou presque purs, les uns à côté des autres, habitant pêle-mêle le même territoire, et dans ce cas, la méthode des pourcentages par sériations et tableaux à deux ou trois variables pourra nous aider à les séparer et à les compter. Mais ces types purs ou presque purs peuvent aussi se croiser et donner lieu à des mélanges : comment classerons-nous, du point de vue de la race, une population dont les individus sont le produit de ce mélange ?

Nous répondrons, tout d'abord, que la méthode des pourcentages tirés d'une sériation et d'une table à deux variables ou plus permet déjà de se faire une idée de la quantité et de la qualité des mélanges qu'une population a subi, et, par conséquent, de retrouver les éléments « étrangers » qui ont donné leur apport à la population en question. Revenons aux tableaux à double entrée : voici la répartition de 32.806 soldats siciliens d'après la taille et la couleur des cheveux simultanément *(Antropometria militare,* tome I, page 287).

Répartition de 32.806 soldats siciliens d'après la taille et la coloration des cheveux.

Couleur des cheveux	Taille			
	inférieure à 1 m. 60	de 1 m. 60 à 1 m. 65	de 1 m. 65 à 1 m. 70	de 1 m. 70 et plus
Rouge	27	43	37	22
Blonde	368	617	451	212
Châtaine	4.431	6.739	4.894	2.407
Noire	2.975	4.703	3.265	1.615
Totaux.	7.801	12.102	8.647	4.256

Il est assez probable qu'une bonne partie des 985, c'est-à-dire 368 + 617 blonds dont la taille est inférieure à 1,65, parmi les 32.806 siciliens de toute taille et de toute coloration de cheveux sont le produit d'un mélange du type méditerranéen à petite taille avec un type « étranger ». Nous disons une bonne partie, car on ne peut pas écarter l'influence d'autres facteurs: nous avons toujours soutenu, par exemple, que le « blondisme » (savoir, la pigmentation très claire), de même que l'« érythrisme », s'associe souvent à des processus d'arrêt du développement organique qui peuvent donc être indépendants de la race.

D'autre part, même sans recourir aux pourcentages, certaines observations suffisent à faire soupçonner l'existence du métissage. En décrivant la forme du nez chez l'*Homo mediterraneus*, les anthropologistes parlent parfois d'un nez (ouverture nasale) large, mais ils parlent d'autres fois, d'un nez étroit [1]. Or, si nous ne nous trompons pas sur ce point, la contradiction n'est qu'apparente; en effet:

1° L'*Homo mediterraneus* a l'ouverture nasale étroite;

2° Si l'on trouve fréquemment chez lui, et beaucoup plus que chez l'*Homo alpinus* et l'*Homo europaeus* du nord de l'Europe, des nez assez larges, c'est qu'il y a eu probablement métissage de ces populations méditerranéennes avec des peuples au nez large ou très large;

3° Par conséquent, si, dans une population appartenant à une race à nez leptorrhinien, on trouve que, dans une région donnée, l'indice nasal s'élève, on peut soupçonner qu'il y a eu mélange avec d'autres races [2].

Ceci nous montre encore une fois que le phénomène du mélange ne s'oppose pas à une étude statistique des caractères de race d'une population. Il faut bien avouer, cependant, que ces recherches sont très délicates et ne peuvent nous conduire qu'à des résultats approximatifs.

Nous ajoutons enfin que, dans les études de ce genre basées sur la géographie anthropostatistique et démographique, il faudra nous contenter, le plus souvent, de caractériser

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[1] Nous rappelons que la forme de l'ouverture nasale est indiquée par le rapport de la largeur de cette ouverture à la hauteur (le quotient × 100), et que l'on a alors: les nez étroits ou leptorrhiniens (indice inférieur à 48 sur le squelette et à 70 sur le vivant); les nez plutôt larges ou mésorrhiniens (indices de 48-53 et 70-85 respectivement), ou les nez très larges ou platyrrhiniens (indices de 53 et plus et 85 et plus respectivement).

[2] Voir le Mémoire de P. Broca: l'*Indice nasal*, « Revue d'Anthropologie », Paris, 1872. Voir aussi, en ce qui concerne la mensuration de l'indice nasal en Italie, Antonio Mori: *Alcuni dati statistici sull' indice nasale degli italiani*, « Archivio per l'Antropologia, ecc. », Firenze, 1907.

une zone de territoire du point de vue de la race, par les caractères de la *majorité* de ses habitants. Il est certain que l'humanité d'aujourd'hui est composée en grande partie de peuples résultant de la réunion et du mélange de plusieurs races; cependant, ces races sont juxtaposées ou mélangées en proportions différentes et l'on ne saurait nier que chaque peuple ou chaque région peut présenter l'une de ces races ou de ces mélanges en quantité plus grande que d'autres. « Cette prépondérance efface, pour ainsi dire, les éléments secondaires et impose à l'ensemble de la population sa physionomie (raciale). A l'origine, ces ensembles étaient sans doute beaucoup plus simples qu'aujourd'hui [1] ».

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[1] G. Sergi: *Le prime e le più antiche civiltà*, avvertenze preliminari, Turin, 1926.

Deuxième chapitre

Par le professeur Alfredo Niceforo.

LA RACE ET LE CANCER EN ITALIE

I.

Données anthropologiques et démographiques concernant l'Italie.

Les données anthropologiques dont nous disposons pour l'étude de la distribution des races en Italie, sont celles de l'*Antropometria militare italiana*. Elles contiennent des moyennes, des pourcentages, des sériations et quelquefois des tables à deux variables, pour plusieurs des caractéristiques physiques qui nous sont nécessaires pour établir la répartition géographique des races: indice céphalique (sur le vivant), taille, coloration des yeux et des cheveux. Certaines données sur la forme du nez, du contour de la face, et autres, ne sont pas utilisables.

Quant aux données démographiques, nous avons déjà calculé ailleurs le taux de mortalité par le cancer (de toute forme et pour tous les âges réunis) pour 1919-1921 (hommes et femmes séparément et total pour les deux sexes) dans chacune des régions italiennes, à l'occasion de notre enquête statistique sur le cancer (voir notre rapport à la Section d'hygiène de la Société des Nations, tableau VIII, C. H. 333, volume I, Genève 1925). Nous possédons aussi le résultat inédit de calculs sur la mortalité par le cancer, dans chacune des seize régions italiennes, résultat obtenu en déterminant la proportion entre le nombre des décès par cancer (hommes âgés de 20 ans et plus) (1919-1921) et le chiffre de la population masculine du même groupe d'âge (recensement de 1911). Mêmes documents pour les femmes. En outre, nous disposons des taux de mortalité par le cancer dans chaque région de l'Italie, calculés en déterminant la proportion entre les décès de 1919-1921 et la population âgée de 40 ans et plus, d'après le rencensement de 1921. Ce dernier calcul n'a pu être fait qu'au moment où l'élaboration des données du recensement de 1921 concernant la classification par âge fut connue. Le présent travail était déjà terminé, mais nous avons eu cependant l'occasion de nous servir de ces résultats tout récents, en relisant et en retouchant notre manuscrit.

En dehors des taux que nous venons d'indiquer, et qui ont été calculés expressément pour l'enquête que nous présentons ici, les publications des Bureaux italiens de statistique ont calculé des taux de mortalité par le cancer (tous les âges ensemble et les deux sexes réunis), à plusieurs époques, pour 1887-91; 1901-1903, 1912-1916, etc.

II.

Principaux caractères de la répartition géographique des races et de la répartition géographique de la mortalité par le cancer en Italie.

A. *Répartition géographique des races en Italie.*

Les données anthropologiques pour chacune des seize régions italiennes de l'avant-guerre sous forme de moyennes et de pourcentages (pourcentages calculés par nous d'après les sériations ou les tableaux à deux variables de l'*Antropometria militare*) sont exposées dans le tableau suivant.

Nous y ajoutons la répartition géographique du thorax moyen.

Des cartogrammes facilitent l'étude de cette répartition géographique.

Régions		Indice céphalique moyen sur le vivant (1)	Taille moyenne (Taille des soldats à 20 ans). (2)	Type brun % (3)	Type blond % (4)	Proportion des hommes de petite taille (1,65) et de crâne dolichomorp. (—80)* (5)	Thorax moyen (6)	Taille moyenne des conscrits (7)	Pourcentage des hommes de crâne brachymorphe (+82) (8)	Pourcentage des hommes de crâne dolichomorphe (—82) (9)
Nord. .	Piémont . . .	85,9	1,650	41,5	13,0	28/1000	87,1	1,627	87,9	12,1
	Ligurie. . . .	82,3	1,656	47,6	10,5	111	87,6	1,636	59,8	40,2
	Lombardie . .	84,4	1,654	44,5	11,7	39	87,4	1,632	81,3	18,7
	Vénétie . . .	85,0	1,666	41,8	14,2	26	88,0	1,653	84,1	15,9
	Emilie	85,2	1,654	50,2	8,3	33	87,8	1,639	84,4	15,6
Centre	Toscane . . .	82,3	1,657	47,7	9,8	115	87,2	1,639	57,8	42,2
	Marches . . .	84,0	1,639	49,0	8,8	102	87,1	1,623	71,7	28,3
	Ombrie . . .	84,1	1,644	48,7	10,4	84	87,5	1,626	74,4	25,6
	Latium . . .	81,0	1,644	52,9	7,3	220	87,4	1,623	43,5	56,5
Midi . .	Abruzzes, Molise	81,9	1,634	50,8	7,6	191	87,2	1,607	53,2	46,8
	Campanie . .	82,1	1,637	54,7	7,6	162	86,6	1,610	47,1	52,9
	Pouilles . . .	79,8	1,637	55,2	6,6	307	87,3	1,603	32,3	67,7
	Basilicate . .	80,8	1,627	56,0	5,8	274	86,3	1,589	42,2	57,8
	Calabre . . .	78,4	1,634	62,2	4,6	428	86,0	1,594	19,9	80,1
Iles . .	Sicile	79,6	1,637	57,3	6,3	327	86,5	1,608	28,9	71,1
	Sardaigne . .	77,5	1,621	70,4	2,9	559	85,7	1,591	15,2	84,8
	Royaume . .	*82,7*	*1,647*	*50,1*	*9,3*	*152/1000*	*87,1*	—	*61,4*	*38,6*

* Voir plus loin paragraphe VII.

Liste des régions d'Italie, d'après la numérotation employée dans les cartogrammes.

1. Piémont.
2. Ligurie.
3. Lombardie.
4. Vénétie.
5. Emilie.
6. Toscane.
7. Marches.
8. Ombrie.
9. Latium.
10. Abruzzes.
11. Campanie.
12. Pouilles.
13. Basilicate.
14. Calabre.
15. Sicile.
16. Sardaigne.

Il aurait été désirable:

a) Que l'unité territoriale choisie fût plus petite que la région, par exemple la province. (L'Italie comptait, avant la guerre, 16 régions, partagées en 69 provinces.) Certes, les données de l'*Antropometria militare* auraient permis une analyse de la répartition raciale par province, mais cet examen aurait été pour nous inutile pour la raison suivante: les décès en Italie (n'oublions pas qu'il s'agit de comparer la répartition géographique des races à celle de la mortalité par cancer), ne sont pas enregistrés au *domicile* habituel du mort, mais *au lieu où ils se sont produits*. Il s'ensuit — comme nous l'avons déjà montré dans notre premier rapport sur la mortalité par cancer du sein et de l'utérus [1] — qu'une partie des individus habitant différentes provinces d'une région, viennent mourir au chef-lieu de la région, où se trouvent les hôpitaux les mieux outillés et les cliniques universitaires. Le cas se produit tout particulièrement pour le cancer, qui nécessite des soins et des interventions chirurgicales. C'est le phénomène que nous avons appelé « l'attraction des chefs-lieux ». Or, si nous avions comparé les données anthropologiques de la *province* à la mortalité par cancer de la *province*, nous aurions risqué d'omettre pour plusieurs provinces, un certain nombre de décès qui se sont produits dans le chef-lieu, c'est-à-dire, dans une autre province, mais qui devraient figurer dans la province où le défunt avait son domicile habituel. Le Piémont, par exemple *(région)*, comprend les *provinces* de *Turin*, d'*Asti*, d'*Alexandrie*, de *Novare*, de *Cunéo*, la ville de Turin, dans la province du même nom, étant la ville la plus importante de la région. Il est plus que probable qu'un certain nombre d'habitants des provinces de Cunéo, Asti, etc., atteints de cancer sont allés se faire soigner et opérer à Turin. Par conséquent, afin de diminuer autant que possible l'inconvénient dont nous avons parlé, nous serons obligés de considérer la totalité des décès de la *région*, sans nous arrêter à la *province*.

b) Il aurait été désirable que les caractères anthropologiques que nous utiliserons fussent plus nombreux que ceux que nous avons groupés dans notre tableau; nous aurions voulu calculer, en plus grand nombre, des pourcentages tirés de tableaux à deux ou trois variables (taille, indice céphalique et coloration, par exemple); mais la documentation fournie par l'*Antropometria militare* — bien que très riche — ne nous a pas permis de faire les groupements que nous aurions désirés.

Quoi qu'il en soit, voici les principales conclusions qu'on peut tirer de nos chiffres *régionaux* et de nos cartogrammes, au sujet de la race:

1. Les régions du nord sont brachymorphes (colonne 1); d'après les pourcentages que nous avons calculés, les brachymorphes se trouvent dans ces régions à raison de 87,9, 81,3, 84,1, 84,4 %; la *Ligurie*, qui est dans le nord, fait exception avec un pourcentage de brachymorphes qui descend à 59,8 % (colonne 8; voir aussi la colonne 9).

2. Les régions du midi et des îles sont dolichomorphes (voir la colonne 9), cependant, la *Campanie* fait exception, avec un nombre presque égal de brachymorphes et de dolichomorphes. Les *Abruzzes* se trouvent presque dans les mêmes conditions. Ce sont les Pouilles, la Calabre, la Sicile et la Sardaigne, qui ont le maximum de dolichomorphes, avec 67,7%, 80,1%, 71,1%, 84,8% (colonnes 8 et 9).

3. Parmi les régions du centre, l'Ombrie et les Marches sont brachymorphes, tandis qu'en *Toscane* les brachymorphes, bien qu'en majorité, ne représentent que les 58% des sujets examinés, et que dans le *Latium* aussi les deux types se présentent presque dans la même proportion.

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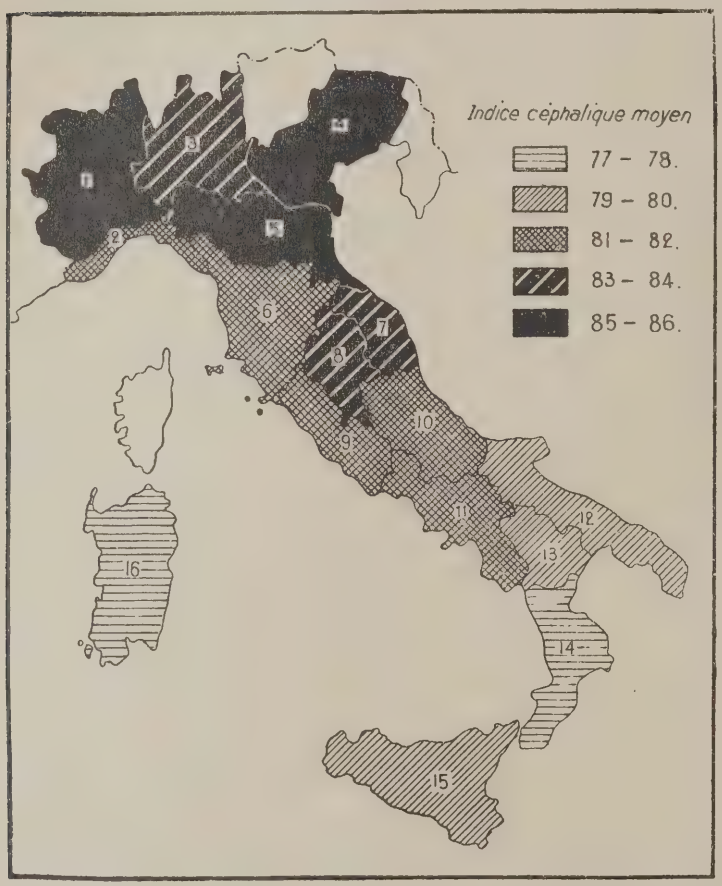
[1] *Rapport sur les résultats des enquêtes démographiques dans certains pays*, Commission du Cancer, C. H. 333, Volume 1, Genève 1925, pages 122 et suivantes.

Figure N° 8.

ITALIE.

Répartition géographique de l'indice céphalique moyen sur le vivant.



4. En somme: brachycéphalie dans le nord, dolichocéphalie, dans le midi, zones brachycéphales ou semi-brachycéphales et semi-dolichocéphales dans le centre[1].

5. Les zones d'*exception* plus ou moins nettes sont: *a*) la *Ligurie*, dans le nord, qui présente un nombre élevé de dolichomorphes. Le fond de sa population était probablement dolichomorphe, et a été altéré par des migrations lentes, provenant du nord et du nord-est; *b*) la *Campanie*, dans le midi, dont le fond devait aussi être dolichomorphe: le mélange de populations, toujours très acentué dans les territoires renfermant des grands ports de mer, y a amené des migrations lentes de brachymorphes; *c*) la *Toscane* au centre; ce pays, qui a exercé pendant des siècles une force considérable d'attraction, situé presque à la limite des dolichomorphes du midi, et des brachymorphes du nord,

[1] Il est peut-être utile de présenter ici quelques chiffres indiquant la répartition des formes craniennes d'après la méthode Sergi, dans quelques régions italiennes. Nous avons déjà parlé de cette méthode en rappellant que les formes dites par Sergi *ellipsoïdes, ovoïdes, pentagonoïdes* correspondent, *en majorité*, aux crânes allongés (de l'espèce euro-africaine de Sergi), tandis que les autres formes (*sphénoïdes, cuboïdes*, etc.) correspondent presque toutes aux crânes arrondis (de l'espèce euro-asiatique de Sergi). Les crânes que nous groupons ici d'après les classifications faites par Moschen et Giuffrida-Ruggeri (« Atti Società romana di antropologia », Rome, 1899 et 1907) sont des crânes de la Ligurie, de la Sicile et de la ville de Bologne (Emilie). La Ligurie, d'après les indications de l'indice céphalique moyen, fourni par l'*Antropometria militare italiana*, doit contenir un bon nombre de dolichocéphales (indice sur le vivant de 82,3); la Sicile est franchement dolichocéphale (indice de 79,6) et l'Emilie, où se trouve Bologne, doit, par contre, présenter, en bon nombre, des brachycéphales (indice de 85,2). Or, les quelques crânes en question se répartissent d'après la classification morphologique de la manière suivante:

Crânes de forme:	*Sicile*	*Ligurie*	*Bologne*
ellipsoïde	75	43	24
ovoïde	67	44	4
pentagonoïde	14	28	4
autres (allongées)	7	1	—
sphénoïdes, cuboïdes, etc. (arrondies)	6	17	40
Totaux	169	133	72

L'on voit assez bien qu'il existe une prédominance de formes ellipsoïdes, ovoïdes, pentagonoïdes, en Sicile et en Ligurie, tandis que les formes arrondies prédominent en Emilie.

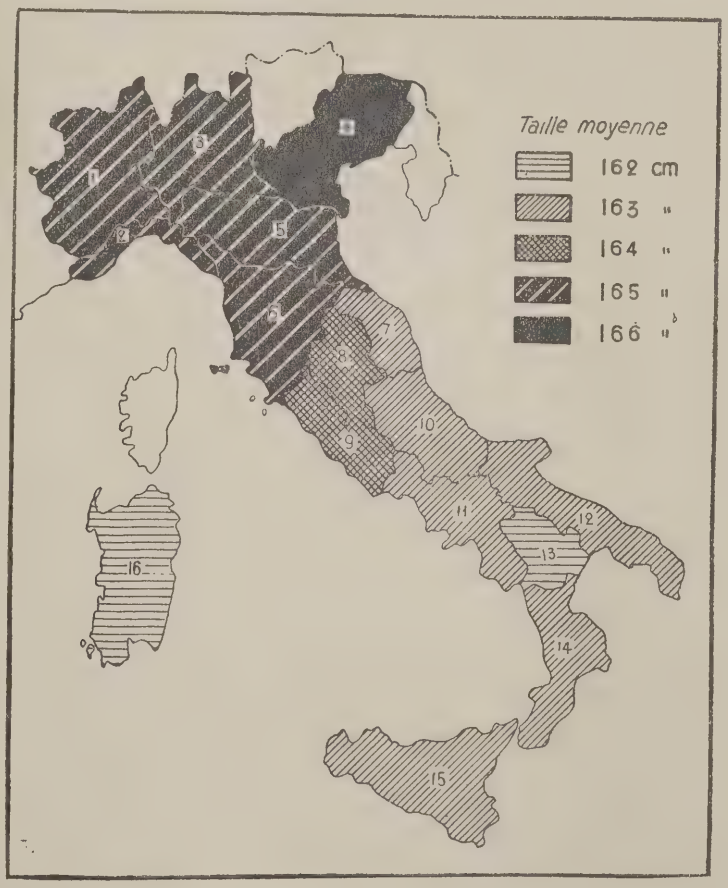
présente ces deux types en nombre presque égal; *d*) le *Latium*, dont la force d'attraction et la position-frontière entre ces deux types de population ont été la cause d'une attirance de populations «étrangères», brachymorphes; *e*) les *Abruzzes*, qui, tout en faisant partie du midi dolichomorphe, ont reçu des infiltrations brachymorphes, non seulement de l'Ombrie et des Marches, mais aussi des côtes adriatiques, fortement brachymorphes[1]. Ces remarques sur les zones raciales d'exception ont une certaine importance pour nos recherches. Nous le verrons bientôt.

6. Les conclusions que nous venons d'énoncer trouvent une confirmation dans l'examen régional des caractères physiques autres que l'indice céphalique. On voit en effet, par notre tableau: *a*) que les *petites tailles* dominent au sud, tandis que les tailles plus élevées se trouvent au nord; *b*) que les brachymorphes, donc de taille plus élevée, au nord, ont un *thorax* plus développé, tandis que les dolichomorphes des îles et de la Calabre ont de très petites tailles et le thorax très peu développé; *c*) que le pourcentage des *types bruns* est beaucoup plus élevé dans le midi et dans les îles que dans le nord; *d*) que le pourcentage des hommes présentant en même temps *une petite taille et un crâne dolichomorphe* tel que nous l'avons calculé d'après les tableaux à double entrée de l'anthropométrie est très élevé au midi et dans les îles, relativement au reste de la péninsule.

Figure N° 9.

ITALIE.

Répartition géographique de la taille moyenne des soldats à 20 ans.



[1] Sur ce point, voir notre ouvrage sur l'anthropologie et les conditions économiques des paysans du Molise; *Ricerche sui contadini*, Palerme (1908), pages 44 et suivantes.

Figure N° 10.

ITALIE.

Répartition géographique du type brun.

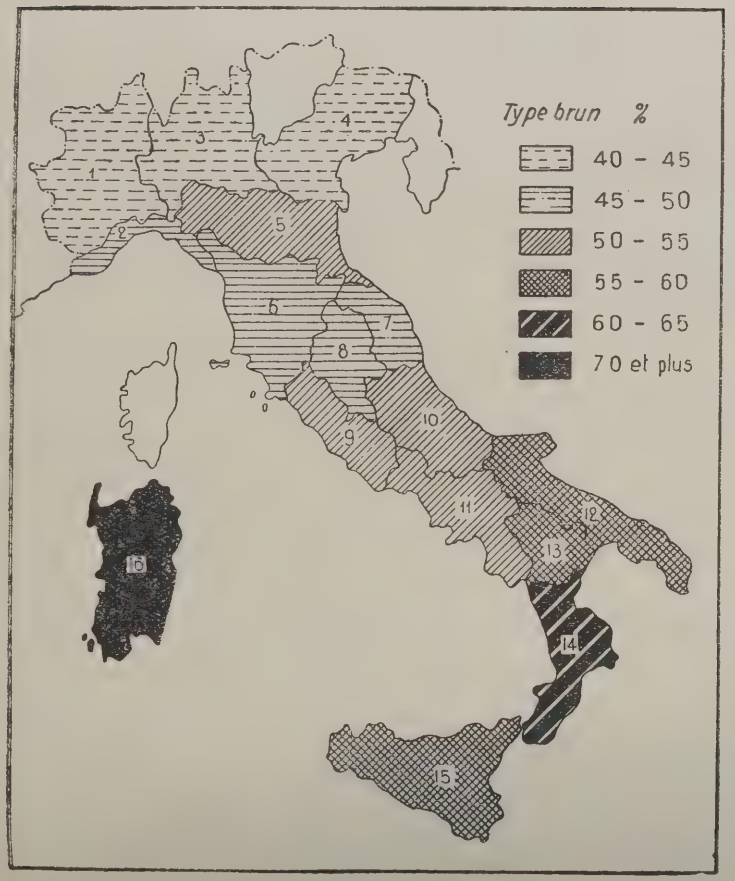


Figure N° 11.

ITALIE.

Répartition géographique du type blond.

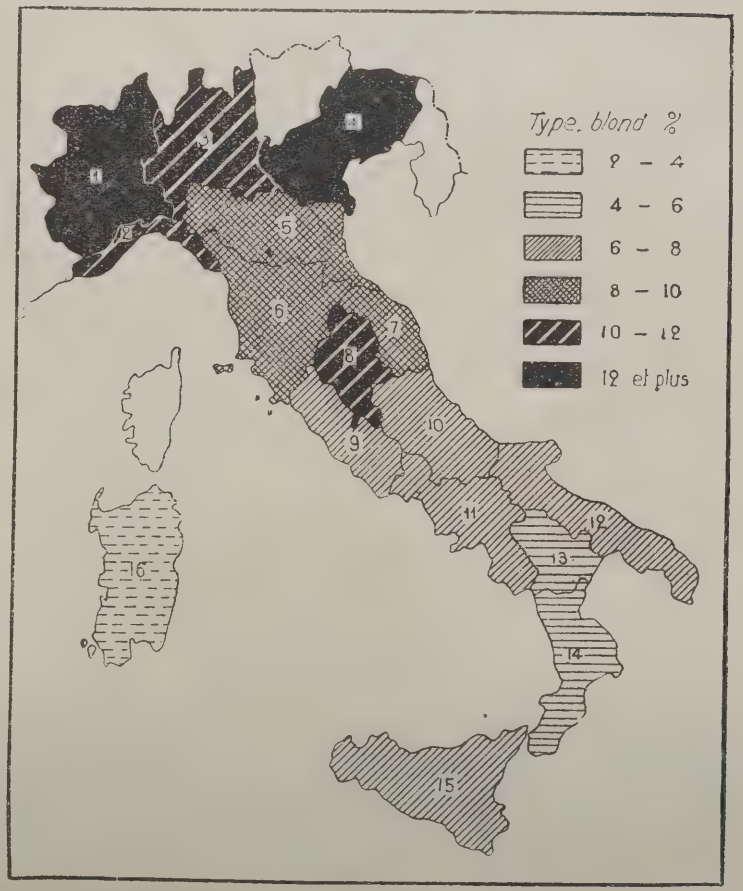


Figure N° 12.

ITALIE.

Répartition géographique des hommes de petite taille *(moins de 1 m. 65) et de* crâne dolichomorphe.

Proportions °/₀₀

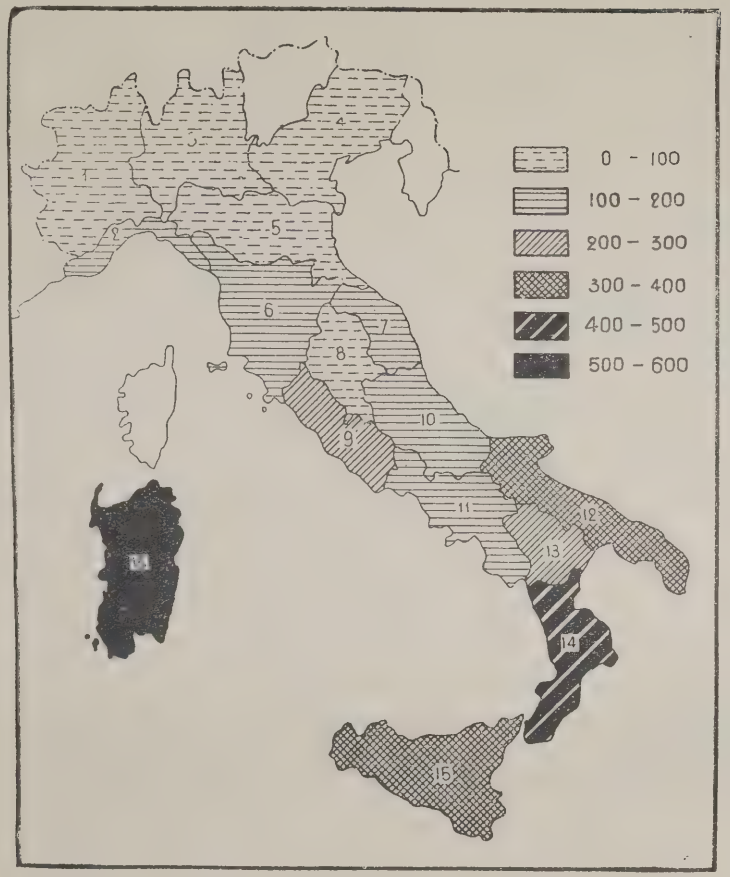


Figure N° 13.

ITALIE.

Répartition géographique des hommes à crâne brachymorphe.

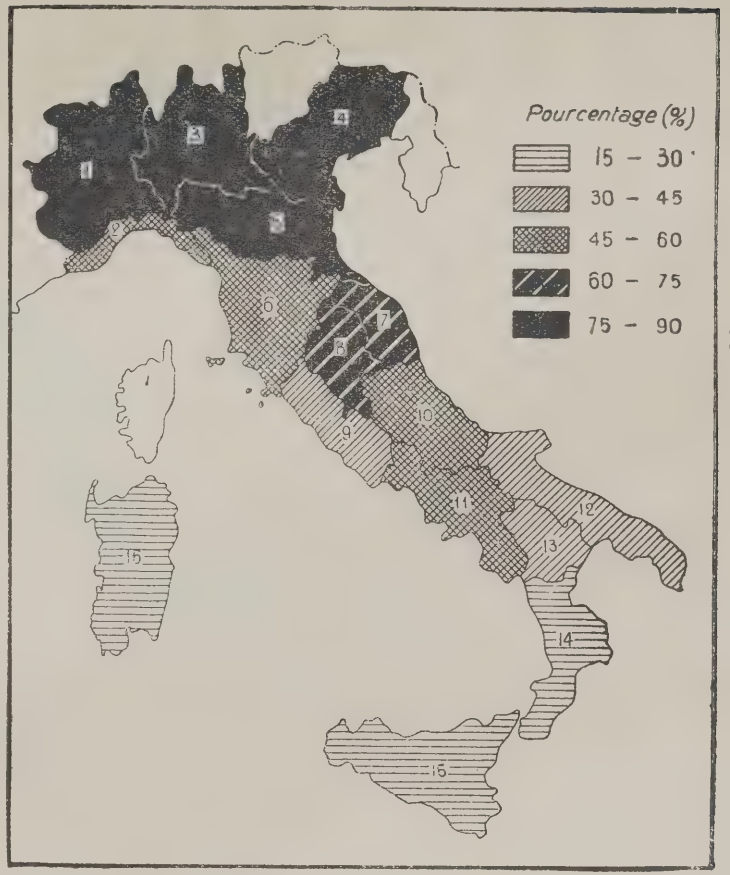
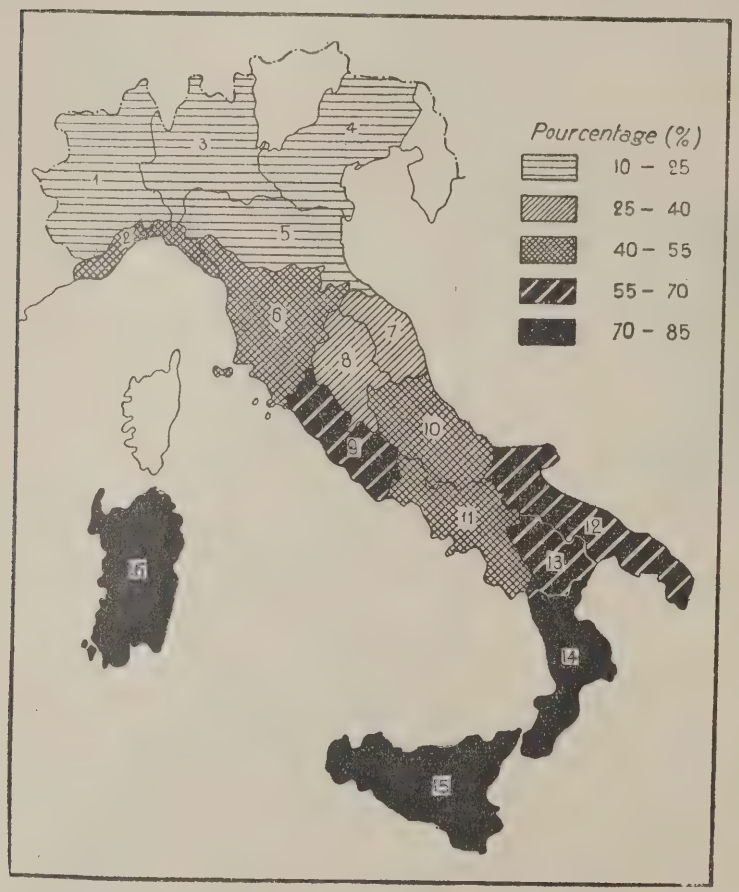


Figure N° 14.

ITALIE.

Répartition géographique des hommes à crâne dolichomorphe.



Nous pourrions donc conclure en affirmant que l'*Homo alpinus* peuple le nord de l'Italie et l'*Homo mediterraneus* le midi et les îles; que les deux se répartissent dans le centre de l'Italie, sans oublier les exceptions régionales que nous avons indiquées.

Il ne faudrait pas oublier, cependant, qu'il y a une certaine différence entre les brachymorphes du Piémont et ceux de la Vénétie. Les premiers ont une taille (soldats 1 m. 650, conscrits 1 m. 627) moins élevée que les derniers (soldats 1 m. 666, conscrits 1 m. 653). Il y a peut-être aussi des différences de morphologie faciale qui permettraient d'affirmer la présence dans les zones de la Vénétie de l'*Homo dinaricus*, brachymorphe de grande taille, de Deniker.

Faisons encore deux remarques qui auront une certaine importance pour les études que nous devons aborder.

A. Si l'on compare la colonne 1 de notre tableau (indice céphalique moyen) aux colonnes 8 et 9 (pourcentages des brachymorphes ou des dolichomorphes), on constate qu'il suffit d'une élévation d'*une* unité dans l'indice céphalique moyen, pour déceler la présence d'un grand nombre de brachymorphes. C'est-à-dire, qu'à la rigueur et *faute de mieux*, pour une première et grossière approximation, l'indice céphalique *moyen* suffirait à donner une idée de la fréquence des différents types craniens de population.

B. Si l'on compare la colonne 1, ou les colonnes 8 et 9 (portant toutes sur l'indice céphalique) aux autres colonnes, on trouve qu'en Italie les brachymorphes ont, en comparaison avec les dolichomorphes, une taille plus élevée et une coloration moins foncée ou claire.

Il s'ensuit que, dans certaines conditions, et faute de mieux, il ne serait pas impossible de se restreindre dans un premier essai de comparaison entre la géographie de la race et la géographie de la mortalité par le cancer, à l'étude (pour les pays où se trouvent en présence

les trois ou quatre types d'*Homo* dont nous avons parlé) de la répartition précise de l'indice céphalique, éclairée par quelques indications, même non statistiques, sur la coloration et la taille. Nous ne suivrons cependant pas toujours cette voie, et, surtout dans les recherches par lesquelles nous commencerons nos travaux, nous aurons soin de ne laisser dans l'ombre aucune donnée susceptible d'augmenter la valeur de notre étude.

Les différents faits anthropologiques que nos chiffres viennent d'indiquer apparaîtront d'une manière évidente, grâce à un simple calcul qui met en comparaison chaque groupe successif d'indices céphaliques moyens avec la moyenne correspondante de chaque caractère (méthode dite des moyennes correspondantes). Nous nous servirons ici, pour former les groupes successifs, des seize indices céphaliques moyens, de la division de la série en quatre parties contenant chacune le même nombre de régions (quatre), de sorte que le premier groupe contiendra les quatre régions qui tombent *avant* le premier « quartile » de la série d'indices céphaliques; le deuxième groupe contiendra les quatre régions qui tombent entre le premier et le deuxième «quartile», etc... Or, en calculant, pour chacun de ces quatre groupes successifs, les moyennes des pourcentages de brachymorphes ou de dolichomorphes, celles des pourcentages des types blond ou brun, et les moyennes de la taille moyenne et du thorax moyen (il s'agit des pourcentages et des moyennes qui figurent déjà au tableau précédent, page 48), on arrive au nouveau tableau qui suit.

D'après ce nouveau tableau, il apparaît que, au fur et à mesure que l'on passe du premier groupe de régions (à l'indice plus bas, dolichomorphes) aux autres groupes de régions jusqu'à arriver au dernier groupe (à indices les plus élevés, brachymorphes) on passe en même temps du sud au nord; et l'on constate aussi que le pourcentage de brachymorphes augmente (24,1, 46,5, 65,9, 84,4) tandis que celui des dolichomorphes diminue; que le type brun diminue, tandis que le type blond augmente; que la taille s'élève (1 m. 632, 1 m. 636, 1 m. 649, 1 m. 659), de même que le thorax se développe (86,4, 86,9, 87,4, 87,6), tous ces mouvements, en augmentation ou en diminution, se faisant de manière assez régulière.

Indices céphaliques des seize régions italiennes en ordre croissant, et en quatre groupes contenant chacun quatre régions, et moyennes correspondantes d'autres caractères anthropologiques.

Régions, et indices céphaliques	Moyennes pour chaque groupe de quatre régions					
	des pourcentages de		des pourcentages des types		des moyennes	
	brachy-morphes	dolicho-morphes	brun	blond	de la taille	du thorax
Sardaigne (77,5), Calabre (78,4), Sicile (79,6), Pouilles (79,8) . . .	24,1	75,9	61,3	5,1	163,2	86,4
Basilicate (80,8), Latium (81,0), Abruzzes (81,9), Campanie (82,1).	46,5	53,5	53,6	7,1	163,6	86,9
Toscane (82,3), Ligurie (82,3), Marches (84,0), Ombrie (84,1) .	65,9	34,1	48,2	9,9	164,9	87,4
Lombardie (84,4), Vénétie (85,0), Emilie (85,2), Piémont (85,9) . .	84,4	15,6	44,5	11,8	165,6	87,6
Royaume (82,7)	*61,4*	*38,6*	*50,1*	*9,3*	*164,7*	*87,1*

B. *Répartition géographique de la mortalité par le cancer en Italie.*

Notre rapport de 1925, déjà cité, a traité, en particulier, cette question. Nous y renvoyons donc le lecteur. Mais ici nous ajoutons des nouvelles données, et nous présenterons aussi des observations spéciales au sujet des causes d'erreur que la répartition géographique d'une cause de décès telle que le cancer peut porter avec elle.

Les tableaux qui suivent indiquent la répartition de la mortalité par le cancer en Italie (16 régions):

a) Pour les deux sexes réunis, de tout âge (1919-21);

b) Pour les hommes et les femmes séparément, âgés de 20 ans et plus (1919-1921);

c) Pour les deux sexes réunis, de 40 ans et plus (1919-21);

d) Pour les deux sexes réunis, de tout âge, en 1912-16 et en 1887-1891 pour que l'on puisse avoir une vue d'ensemble de la répartition géographique de la mortalité, par le cancer, telle qu'elle se présentait il y a plusieurs années.

Les chiffres entre parenthèses indiquent le nombre *absolu* de décès par cancer, pendant la période tout entière, dans chaque région; ils ont servi à calculer chaque taux de mortalité. D'autres indications se trouvent en note aux tableaux.

Mortalité par cancer pour 100.000 individus vivants de chaque groupe[1].

Régions		Hommes et femmes de tout âge 1919-1921		Hommes âgés de 20 ans et plus 1919-1921		Femmes âgées de 20 ans et plus 1919-1921	
		(1)		(2)		(3)	
Nord	Piémont	79	(8.106)	115	(3.410)	145	(4.615)
	Ligurie	91	(3.265)	128	(1.410)	166	(1.815)
	Lombardie	95	(13.652)	170	(6.708)	163	(6.748)
	Vénétie	68	(7.205)	129	(3.387)	125	(3.666)
	Emilie	105	(8.410)	181	(4.170)	183	(4.128)
	Toscane	106	(8.545)	176	(4.074)	185	(4.369)
	Marches	73	(2.380)	128	(1.104)	125	(1.231)
Centre	Ombrie	61	(1.264)	93	(554)	117	(695)
	Latium	85	(3.335)	125	(1.450)	158	(1.834)
	Abruzzes et Molise	45	(1.911)	71	(751)	82	(1.118)
	Campanie	47	(4.647)	63	(1.673)	94	(2.876)
Midi	Pouilles	41	(2.596)	53	(909)	87	(1.612)
	Basilicate	39	(557)	57	(201)	79	(341)
	Calabre	40	(1.690)	62	(608)	81	(1.052)
Iles	Sicile	45	(4.948)	62	(1.924)	91	(2.925)
	Sardaigne	35	(902)	51	(372)	69	(503)
	Italie	*71*	*(73.413)*	*115*	*(32.705)*	*129*	*(39.528)*

Mortalité par cancer pour 100.000 individus vivants de 40 ans et plus, les deux sexes réunis, 1919-1921 [2].

Piémont	235	(8.025)
Ligurie	252	(3.225)
Lombardie	284	(13.456)
Vénétie	140	(7.053)
Emilie	313	(8.298)
Toscane	326	(8.443)
Marches	218	(2.335)
Ombrie	210	(1.249)
Latium	227	(3.284)
Abruzzes et Molise	140	(1.869)
Campanie	138	(4.549)
Pouilles	117	(2.521)
Basilicate	123	(542)
Calabre	117	(1.660)
Sicile	128	(4.849)
Sardaigne	111	(875)
Italie	*200*	*(72.233)*

[1] Population vivante d'après le dénombrement de 1911.

[2] Le nombre absolu de décès est celui des décès de 20 ans et plus; on ne commet qu'une erreur minime en se servant de cette donnée au lieu de celle résultant du nombre de décès de 40 ans et plus. La population vivante est celle du recensement de 1921, âgée de 40 ans et plus.

Mortalité par cancer pour 100.000 individus, les deux sexes réunis, et de tous les âges [1].

	Période 1912-1916	Période 1887-1891		Période 1912-1916	Période 1887-1891
Piémont . . .	75,2 (13.136)	37,2 (5.905)	Abruzzes et Molise . . .	46,9 (3.452)	29,6 (2.022)
Ligurie	77,9 (4.895)	52,0 (2.510)	Campanie. . .	44,7 (7.613)	32,5 (4.880)
Lombardie . .	85,5 (21.229)	53,6 (10.512)	Pouilles. . . .	41,0 (4.552)	27,8 (2.407)
Vénétie. . . .	66,5 (12.311)	44,3 (6.519	Basilicate. . .	44,2 (1.075)	23,6 (605)
Emilie	95,6 (13.323)	65,7 (7.513)	Calabre. . . .	40,2 (2.937)	23,3 (1.517)
Toscane . . .	98,2 (13.624)	68,2 (7.991)	Sicile.	42,9 (8.087)	29,9 (4.735)
Marches . . .	73,7 (4.147)	55,2 (2.725)	Sardaigne. . .	32,2 (1.411)	17,2 (626)
Ombrie. . . .	59,9 (2.127)	44,0 (1.341)	*Italie*. .	*66,2 (118.816)*	*42,7 (64.190)*
Latium. . . .	71,2 (4.897)	46,7 (2.382)			

Voici les quelques observations que suggère une première inspection de nos tableaux:

1. Le midi et les îles sont beaucoup moins atteints par le cancer que le centre et le nord.

2. Le nord et le centre sont assez lourdement frappés puisque les taux de mortalité de chacune de leurs régions sont, à une ou deux exceptions près, constamment supérieurs au taux général pour l'Italie.

3. Le taux du Latium est assez élevé, mais il ne faut pas oublier que la ville de Rome exerce une forte attraction sur les malades, attraction qui déborde le cadre de la région.

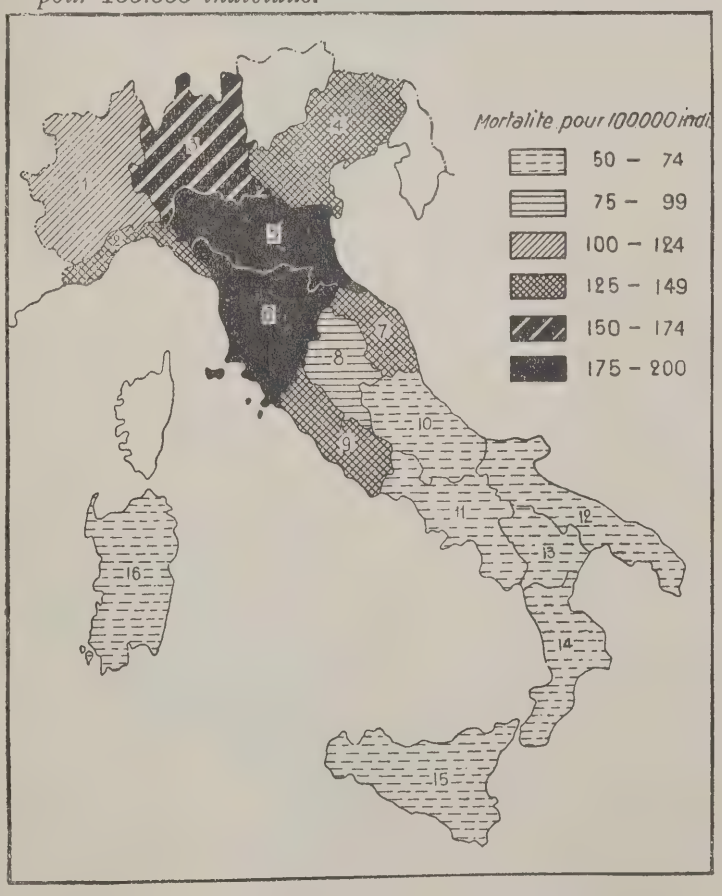
4. Deux régions attirent spécialement notre attention comme étant celles où la mortalité par cancer est la plus élevée: la *Toscane* (au centre) et l'*Emilie* (au nord, mais confinant aux régions du centre).

5. La *Ligurie* et la *Lombardie* suivent de très près, avec des taux assez élevés.

Figure N° 15.

ITALIE.

Répartition géographique de la mortalité par cancer *chez les* hommes *de 20 ans et plus, période de 1919 à 1921, pour 100.000 individus.*



[1] Chiffres calculés par l'*Annuario Statistico*, de 1917-18, page 60.

Figure N° 16.

ITALIE.

Répartition géographique de la mortalité par cancer *chez les* femmes *âgées de 20 ans et plus, période de 1919 à 1921, pour 100.000 individus.*

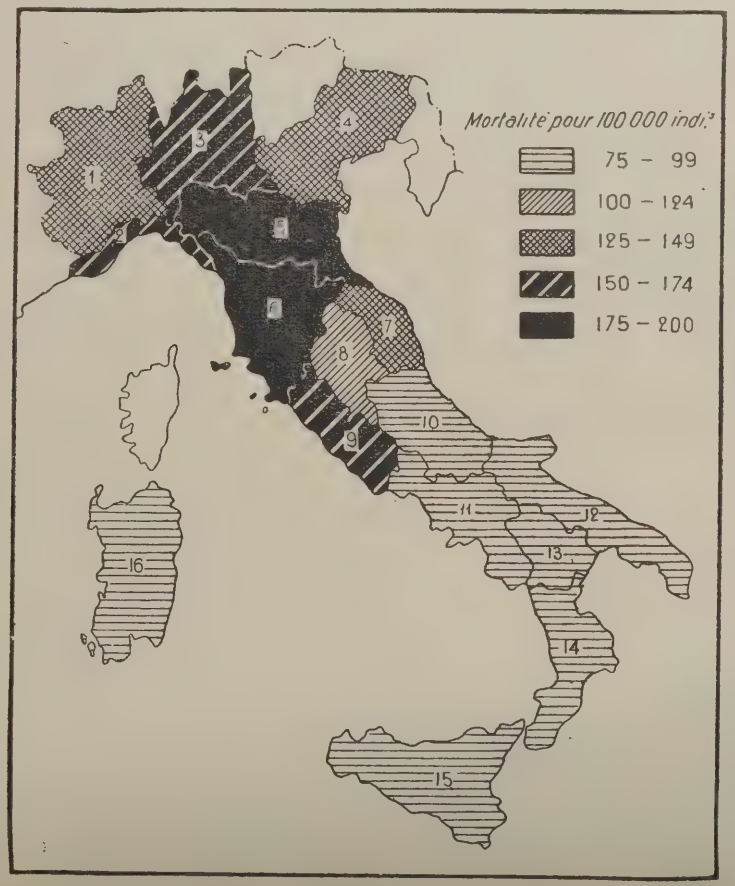
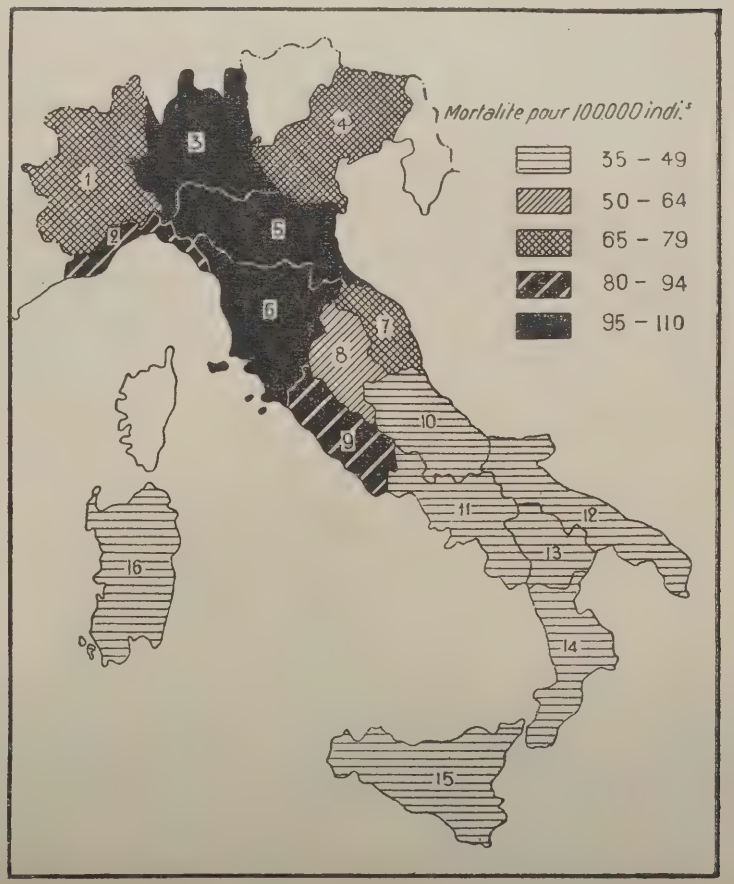


Figure N° 17.

ITALIE.

Répartition géographique de la mortalité par cancer *chez la population de* tout âge, *période 1919-1921, pour 100.000 individus.*



L'examen que nous venons de faire, ainsi que d'autres examens qu'on pourrait effectuer sur la répartition géographique indiquée par nos chiffres, seront facilités par le tableau suivant qui représente les chiffres des trois tableaux précédents par ordre de rang. Les numéros les plus bas indiquant les régions où la mortalité par le cancer est la plus basse, on constate immédiatement que les régions du midi et les îles ont toujours des numéros allant de 1 à 7; que ces numéros sont plus bas que ceux entre lesquels se place la mortalité par le cancer, pour l'Italie entière; que la Toscane et l'Emilie se rangent toujours aux deux rangs les plus élevés: 15 et 16, etc.

Ce tableau et les trois tableaux qui précèdent suggèrent aussi les observations suivantes:

Si l'on compare entre elles les différentes colonnes de nos tableaux, on remarque, d'une part, que le taux de mortalité par le cancer a constamment augmenté dans chaque région (de 1887-1891 à 1919-21) à une ou deux exceptions près; et que, d'autre part, l'augmentation de la mortalité par le cancer a été généralement plus forte pour les régions du nord et pour celles du centre, où la mortalité était déjà assez élevée, que pour les régions du midi et les îles.

Numéros d'ordre, ou rang, que les seize régions italiennes occupent dans les différentes séries de mortalité par le cancer, le N° 1 indiquant la mortalité la plus basse, et le N° 16 la plus élevée.

Régions	Période 1887-1891	Période 1912-1916	Période 1919-1921			Période 1919-1921
			Les 2 sexes réunis (tout âge)	Hommes 20 ans et plus	Femmes 20 ans et plus	les 2 sexes réunis, 40 ans et plus
Piémont	8	12	11	9	11	12
Ligurie	12	13	13	11	14	13
Lombardie	13	14	14	14	13	14
Vénétie	10	9	9	13	9	7
Emilie	15	15	15	16	15	15
Toscane	16	16	16	15	16	16
Marches	14	11	10	11	9	10
Ombrie	9	8	8	8	8	9
Latium	11	10	12	10	12	11
Abruzzes et Molise	5	7	5	7	4	7
Campanie	7	6	7	6	7	6
Pouilles	4	3	4	2	5	2
Basilicate	3	5	2	3	2	4
Calabre	2	2	3	4	3	2
Sicile	6	4	5	4	6	5
Sardaigne	1	1	1	1	1	1
Italie	(8-9)	(8-9)	(9-10)	(9 *bis*)	(9-10)	(8-9)

On peut remarquer aussi que, dans ses grandes lignes, la répartition régionale du cancer reste la même, quelle que soit la colonne de nos tableaux que nous interrogions. En effet, en calculant « l'indice des rangs » $\left(\rho = 1 - \frac{6\,(\Sigma\, d^2)}{N\,(N^2 - 1)}\right)$ entre la colonne de la mortalité pour tous les âges ensemble, (1919-1921) et celle pour les âges de 40 ans et plus, on trouve 0,969 qui est presque l'unité, celle-ci indiquant que les éléments des deux séries se placent rigoureusement suivant les mêmes rangs [1]. Cependant, on peut voir que cette répartition sinon dans ses grandes lignes, du moins dans ses détails, change légèrement suivant que l'on considère séparément les hommes ou les femmes. On remarque aussi que la répartition géographique de la mortalité par le cancer, pour les hommes et les femmes ensemble, suit de plus près celle des femmes que celle des hommes.

Tels sont donc les résultats *statistiques* et, pour ainsi dire *formels* que nos tableaux peuvent suggérer. Nous verrons plus loin si les chiffres eux-mêmes sur lesquels nous avons travaillé présentent un degré de confiance tel que les résultats obtenus puissent être considérés comme des résultats *réels*.

[1] Le coefficient ρ dont nous nous servons ici donne une bonne approximation du coefficient r de Bravais, en posant $r = 2\ \mathrm{Sin}\left(\frac{\pi}{6}\rho\right)$.

III.

Indice céphalique moyen et mortalité par le cancer.

Pour nos comparaisons entre la répartition géographique de l'indice céphalique et celle de la mortalité par le cancer, nous appliquerons tout d'abord la méthode des *moyennes correspondantes.*

Un coup d'œil aux indices céphaliques des seize régions italiennes nous montre qu'ils oscillent entre un minimum de 77,5 (Sardaigne) et un maximum de 85,9 (Piémont). Plaçons ces indices en ordre croissant et répartissons cette série de seize indices céphaliques en quatre tranches égales: la première comprendra les quatre indices les plus bas (premier quart de la série), et la dernière les quatre indices les plus élevés (dernier quart de la série). Plaçons en regard de chaque indice céphalique de cette série ascendante le taux correspondant de mortalité par le cancer. On trouvera le résultat de cette opération au tableau ci-joint. Cette disposition permet de voir assez facilement si la mortalité par le cancer augmente ou diminue lorsque l'indice céphalique *augmente.* Dans notre cas, à l'augmentation de l'indice céphalique correspond une diminution de la mortalité par le cancer.

Indices céphaliques des seize régions italiennes en ordre croissant (c'est-à-dire passage des dolichomorphes aux brachymorphes)		Mortalité correspondante par le cancer pour 100.000 habitants de chaque groupe d'âge		
		Hommes de 20 ans et plus 1919-1921	Femmes de 20 ans et plus 1919-1921	Hommes et femmes de tout âge 1919-1921
77,5	Sardaigne	51	69	35
78,4	Calabre	62	81	40
79,6	Sicile	62	91	45
79,8	Pouilles	53	87	41
80,8	Basilicate	57	79	39
81,0	Latium	125	158	85
81,9	Abruzzes et Molise	71	82	45
82,1	Campanie	63	94	47
82,3	Toscane	176	185	106
82,3	Ligurie	128	166	91
84,0	Marches	128	125	73
84,1	Ombrie	93	117	61
84,4	Lombardie	170	163	95
85,0	Vénétie	129	125	68
85,2	Emilie	181	183	105
85,9	Piémont	115	145	79
82,7	*Italie*	*115*	*129*	*71*

Renversons maintenant les rôles et mettons en ordre *croissant* les taux de mortalité par le cancer, en inscrivant en face de chaque taux de mortalité de la série ainsi composée l'indice céphalique correspondant. Nous avons le tableau suivant. Nous nous bornerons dans ce tableau, à répéter les chiffres de mortalité du groupe d'âge de 20 ans et plus (hommes).

Taux de mortalité par le cancer dans 16 régions italiennes, par ordre croissant (hommes de 20 ans et plus)		Indice céphalique correspondant
51	Sardaigne	77,5
53	Pouilles	79,8
57	Basilicate	80,8
62	Calabre	78,4
62	Sicile	79,6
63	Campanie	82,1
71	Abruzzes et Molise	81,9
93	Ombrie	84,1
115	Piémont	85,9
125	Latium	81,0
128	Ligurie	82,3
128	Marches	84,0
129	Vénétie	85,0
170	Lombardie	84,4
176	Toscane	82,3
181	Emilie	85,2
115	*Italie*	*82,7*

Ici encore, on voit que lorsque la série de la mortalité par le cancer va en augmentant, les indices céphaliques passent, *grosso modo*, de la dolichomorphie à la brachymorphie.

On obtiendrait une vision synthétique de ces faits, en plaçant en face de chaque quart de la série ascendante les moyennes correspondantes de l'autre phénomène: c'est-à-dire en face du premier quart des indices céphaliques croissants, la moyenne des quatre taux de mortalité, etc. Les résultats sont indiqués au tableau suivant:

	Classes d'indices céphaliques ascendants				Moyenne des taux correspondants de mortalité par le cancer		
					Hommes et femmes de tout âge	Hommes de 20 ans et plus	Femmes de 20 ans et plus
Les plus dolicho-morphes:							
1er groupe . .	77,5	78,4	79,6	79,8	40	57	82
2me groupe . .	80,8	81,0	81,9	82,1	54[1]	79[2]	103[3]
Les plus brachy-morphes:							
3me groupe . .	82,3	82,3	84,0	84,1	83	131	148
4me groupe . .	84,4	85,0	85,2	85,9	87	149	154

[1] 44 sans la mortalité du Latium.
[2] 64 sans la mortalité du Latium.
[3] 85 sans la mortalité du Latium.

Et en renversant les rôles, on obtient:

1. Aux quatre groupes de mortalité croissante, pour les hommes de 20 ans et plus, correspondent les quatre moyennes suivantes des indices céphaliques:

79,1 81,9 83,3 84,2.

2. Aux quatre groupes de mortalité croissante, pour les femmes de 20 ans et plus, correspondent les quatre moyennes suivantes des indices céphaliques:

79,7 81,4 84,0 83,9.

3. Aux quatre groupes de mortalité croissante, pour les deux sexes réunis de tout âge, correspondent les quatre moyennes suivantes des indices céphaliques:

79,1 81,9 84,0 83,9.

En général, il y a augmentation plus ou moins régulière de mortalité, en passant du premier au quatrième groupe d'indices céphaliques, à savoir en passant des dolichomorphes aux brachymorphes; et il y a augmentation plus ou moins régulière d'indice céphalique (c'est-à-dire qu'il y a passage des dolichomorphes aux brachymorphes) lorsqu'on procède du groupe de la mortalité la plus basse au groupe où la mortalité est la plus élevée.

On peut calculer la moyenne des différents taux comme nous l'avons fait, si l'ou veut avoir une première idée assez approximative de l'allure *générale* du phénomène. Mais l'on pourrait observer qu'au lieu de se servir de la moyenne tirée de taux différents de mortalité, il faudrait calculer chaque moyenne non pas d'après des moyennes, mais d'après les chiffres absolus du groupe considéré. Voici ce que nous voulons dire:

Soit, d'une part, la série des indices céphaliques, en ordre croissant, telle qu'elle figure dans nos tableaux précédents. En face du premier groupe des quatre indices: 77,5, 78,4, 79,6, 79,8, le calcul des *moyennes* des taux correspondants de mortalité donne, pour les hommes de 20 ans et plus $\left(\frac{51 + 62 + 62 + 53}{4}\right) = 57$, et, pour les femmes âgées de 20 ans et plus $\left(\frac{69 + 81 + 91 + 87}{4}\right) = 82$. Les quatre régions comprises dans ce groupe sont la Sardaigne, la Calabre, la Sicile et les Pouilles. Le calcul de la moyenne pour la mortalité (hommes), au lieu d'être effectué en additionnant 51, 62, 62, 53 et en divisant par 4, aurait pu être effectué en calculant le rapport entre la somme des décès annuels par le cancer (hommes âgés de 20 ans et plus, dans les quatre régions) et la population masculine totale des quatre régions, âgée de 20 ans et plus. Ce calcul ne donne pas toujours des résultats très différents de ceux de l'autre; mais parfois il amène à des chiffres assez éloignés de ceux qu'on obtient par l'autre méthode.

Tous les éléments de ce nouveau calcul sont groupés dans les deux tableaux suivants: le premier donne des chiffres *absolus* des décès par le cancer et de la population par sexe, de 20 ans et plus dans chaque région (1919-1921) et la population de 40 ans et plus; le deuxième contient les chiffres *absolus* des décès par le cancer, hommes et femmes ensemble, de tout âge, pour la même période, et la population totale des deux sexes, dans chaque région.

Indices céphaliques moyens des régions italiennes, par ordre croissant		Décès par le cancer pendant la période 1919-1921 (population âgée de 20 ans et plus)		Population âgée de 20 ans et plus (1911)		Population âgée de 40 ans et plus (les deux sexes réunis) (1921)
		Hommes	Femmes	Hommes	Femmes	
77,5	Sardaigne	372	503	242.716	241.760	262.177
78,4	Calabre	608	1.052	329.087	430.390	469.578
79,6	Sicile	1.924	2.925	1.033.456	1.069.942	1.261.089
79,8	Pouilles	909	1.612	570.657	614.188	715.241
80,8	Basilicate	201	341	118.414	144.558	145.488
81,0	Latium	1.450	1.834	387.202	386.648	482.667
81,9	Abruzzes et M.	751	1.118	355.153	456.439	444.928
82,1	Campanie	1.673	2.876	883.581	1.015.227	1.101.139
82,3	Toscane	4.074	4.369	773.188	788.544	862.202
82,3	Ligurie	1.410	1.815	366.301	364.643	426.699
84,0	Marches	1.104	1.231	287.747	329.061	356.547
84,1	Ombrie	554	695	198.578	198.607	198.016
84,4	Lombardie	6.708	6.748	1.314.899	1.384.009	1.577.423
85,0	Vénétie	3.387	3.666	876.091	978.364	1.687.988
85,2	Emilie	4.170	4.128	768.099	753.136	884.193
85,9	Piémont	3.410	4.615	987.119	1.057.661	1.141.002

Groupes de régions par ordre croissant de l'indice céphalique	Décès par cancer, population de *tout âge* pendant la période 1919-1921, les deux sexes réunis	Population de tout âge (1911)
Sardaigne . . .	902	852.407
Calabre	1.690	1.402.151
Sicile	4.948	3.672.258
Pouilles . . .	2.596	2.130.151
Basilicate . .	557	474.021
Latium . . .	3.335	1.302.423
Abruzzes et M.	1.911	1.430.706
Campanie . . .	4.647	3.311.990
Toscane . . .	8.545	2.694.706
Ligurie . . .	3.265	1.197.231
Marches . . .	2.380	1.093.253
Ombrie . . .	1.264	686.596
Lombardie . .	13.652	4.790.473
Vénétie	7.205	3.527.360
Emilie	8.410	2.681.201
Piémont . . .	8.106	3.424.450

Taux pondéré de mortalité pour les quatre premières régions (hommes âgés de 20 ans et plus)

$$\left\{ \frac{\frac{372 + 608 + 1.924 + 909}{3}}{242.716 + 329.087 + 1.033.456 + 570.657} \right\} \times 100.000$$

ce qui donne un taux de mortalité de 58 pour 100.000 hommes âgés de 20 ans et plus. On aurait pu calculer, — et on aurait obtenu le même résultat —, en multipliant le taux de mortalité de chaque région par le nombre absolu des habitants de la région, puis en divisant la somme de ces produits par le total des habitants.

Voici, en effet, le résultat de ce nouveau calcul des moyennes correspondantes (pondérées).

Groupes de régions par ordre croissant de l'indice céphalique	Taux de mortalité par cancer, 1919-21, calculés sur le nombre absolu des décès et de la population de chaque groupe (Pour 100.000 individus de chaque groupe)		
	Hommes de 20 ans et plus	Femmes de 20 ans et plus	Les deux sexes réunis et de tout âge
Groupe I (le plus dolichomorphe)	58	86	42
Groupe II	78	103	53
Groupe III	146	160	110
Groupe IV (le plus brachymorphe)	149	153	86

L'allure générale du phénomène reste à peu près celle que la méthode de la moyenne arithmétique simple avait indiquée; mais ici, la coïncidence entre l'élévation de l'indice céphalique (brachycéphalie) et l'élévation du taux de mortalité est moins régulière. On remarque:

1° Que les deux premiers groupes d'indices céphaliques (77,5 à 82,1, dolichomorphes) ont des taux de mortalité par le cancer plus bas que les deux derniers (82,3 à 85,9, brachymorphes);

2° Que le troisième groupe, par contre (indices 82,3 à 84,1: Toscane, Ligurie, Marches, Ombrie) aurait une mortalité plus élevée que le dernier. Y a-t-il lieu de soupçonner que les dolichomorphes ont une mortalité par cancer très basse, les brachymorphes une mortalité plus élevée, et les zones où les deux éléments sont fortement mélangés une mortalité plus élevée encore ?

On peut répéter nos calculs pour la population de 40 ans et plus. Les données numériques nécessaires à ce nouveau travail se trouvent dans les tableaux que nous avons déjà mis sous les yeux du lecteur. Or, si l'on calcule les moyennes ou les taux correspondants de mortalité pour chaque groupe de régions placées par ordre d'indice céphalique croissant, voici le résultat:

Groupes de régions par ordre croissant de l'indice céphalique.	Taux de mortalité par le cancer, 1919-1921, correspondant à chaque groupe; les deux sexes réunis (âgés de 40 ans et plus) (Pour 100.000 individus de chaque sexe)	
	Moyenne des taux [1]	Taux moyens (taux pondérés)
Groupe I (le plus dolichomorphe)	118	122
Groupe II	157	157
Groupe III	251	274
Groupe IV (le plus brachymorphe)	243	232

[1] Voici les taux pour chaque région (nombre des décès par le cancer, de 20 ans et plus, par rapport à la population vivante de 40 ans et plus, les deux sexes réunis): Sardaigne, 111; Calabre, 117; Sicile, 128; Pouilles, 117; Basilicate, 123; Latium, 227; Abruzzes et Molise, 140; Campanie, 138; Toscane, 326; Ligurie, 252; Marches, 218; Ombrie, 210; Lombardie, 284; Vénétie, 140; Emilie, 313; Piémont, 235.

Un diagramme peut donner aussi une idée de l'allure que prend la variation de l'indice céphalique en passant d'une région à l'autre et de celle que prend, en même temps, l'allure de la mortalité correspondante par le cancer. Il suffit d'inscrire l'un après l'autre, sur une ligne horizontale et à des distances égales, les noms des seize régions d'Italie, *par ordre céphalique croissant*, c'est-à-dire des dolichomorphes aux brachymorphes, de représenter ensuite par une coordonnée ou un point l'indice céphalique de chaque région, de manière à avoir une ligne ascendante ou plus ou moins ascendante, et de représenter en même temps, sur ce même diagramme, pour chaque région, son taux de mortalité par le cancer. Nous nous limiterons à la série concernant la mortalité des hommes âgés de 20 ans et plus et nous nous servirons d'un diagramme logarithmique. On voit que, tandis que la ligne de l'indice céphalique monte, la ligne de la mortalité, avec des oscillations et des irrégularités plus ou moins marquées, tend aussi à monter; la première partie de cette ligne-ci est *au-dessous* de la ligne de l'indice céphalique; la deuxième partie saute au-dessus. (Voir figure 18 à la page suivante.)

D'ailleurs, la série de la mortalité, telle que nous venons de l'obtenir en plaçant chaque mortalité régionale en face de chaque indice céphalique croissant, peut être interpolée par une ligne droite qui est nettement ascendante. La série de la mortalité, en effet, donne les taux suivants: 51, 62, 62, 53, 57, 125, 71, 63, 176, 128, 128, 93, 170, 129, 181, 115, ces taux se référant respectivement aux régions suivantes: Sardaigne, Calabre, Sicile, Pouilles, Basilicate, Latium, Abruzzes, Campanie, Toscane, Ligurie, Marches, Ombrie, Lombardie, Vénétie, Emilie, Piémont. En interpolant une ligne droite, l'équation qui en résulte est $y = 104 + 7{,}13\,x$ dans laquelle la valeur 104 indique la moyenne des seize taux, le signe + indique que la ligne droite est ascendante et la valeur 7,13 mesure de combien la ligne droite monte en passant d'un terme à l'autre de la série théorique formant la ligne droite [1].

Mais quelle est l'« erreur » de ce coefficient d'élévation (slope of trend) de la ligne droite ? L'on sait que cette erreur est indiquée par $\sigma_b = \frac{\sigma_r}{\sqrt{\Sigma x^2}}$ où σ_r est égal à la racine carrée de la moyenne des carrés des écarts entre la ligne droite et la série brute, c'est-à-dire qu'il résulte du calcul de $\sigma_r{}^2 = \frac{\Sigma_r{}^2}{N}$, où r représente chaque écart. Et Σx^2 est égal à $\frac{N\,(N^2-1)}{12}$. Or, dans notre cas, $\sigma_r{}^2 = \frac{14559}{16} = 910$, les écarts étant pris entre la série brute et les chiffres de la ligne droite arrondis à la première décimale; $\sigma_r = 30{,}1$; $\Sigma x^2 = 340$; par conséquent, l'erreur est $\sigma_b = \frac{30{,}1}{\sqrt{340}} = 1{,}64$.

La signification de cette erreur est donnée par le rapport entre le coefficient d'élévation de la ligne droite, que nous connaissons, et l'erreur elle-même, c'est-à-dire par: $\frac{7{,}13}{1{,}64} = 4{,}34$, cette dernière valeur montrant que le coefficient d'élévation de la ligne

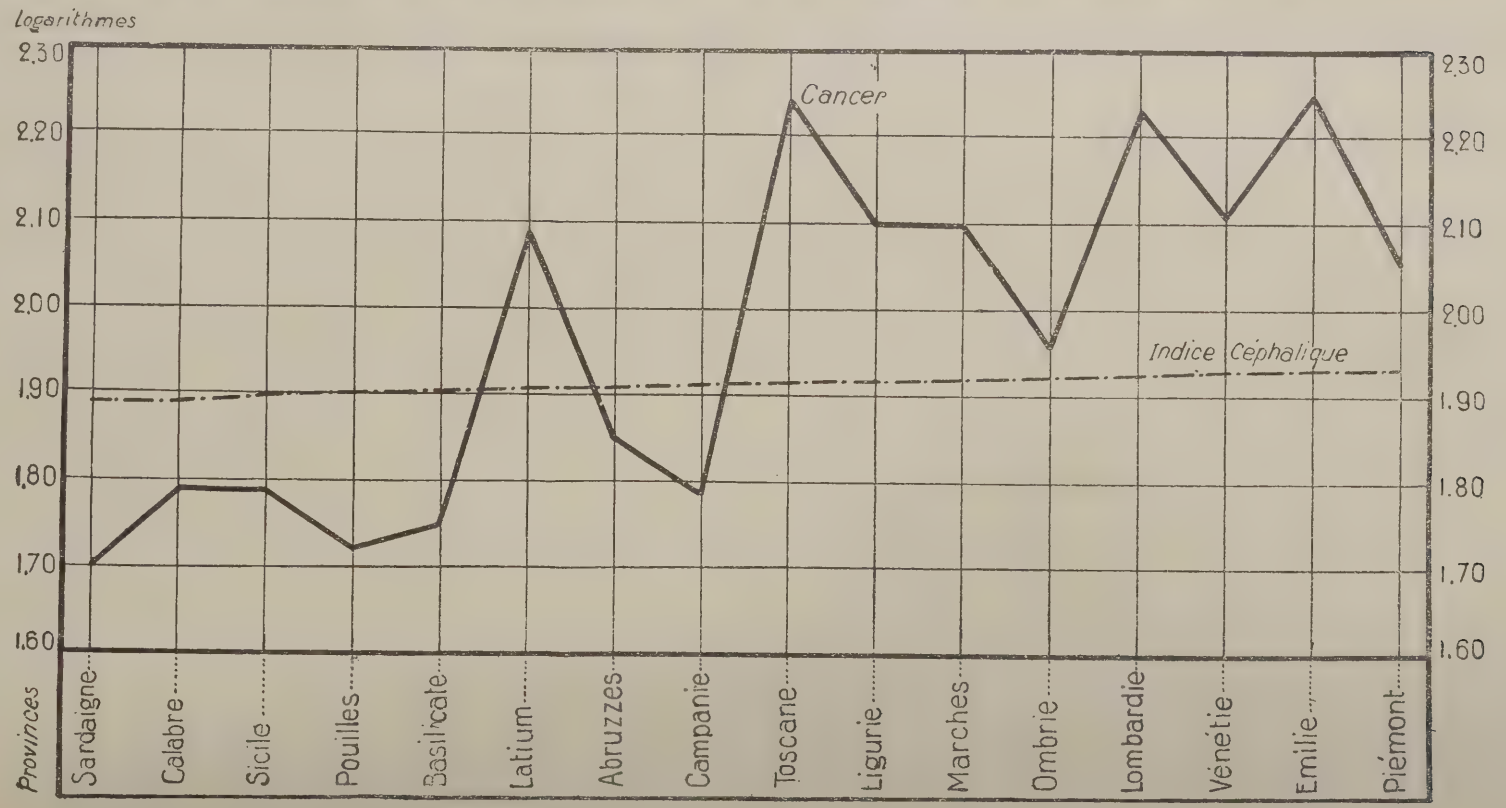
---

[1] Nous avons opéré ici sur la succession des taux de mortalité de chaque région comme si toutes les distances entre les régions placées sur la ligne des abscisses étaient égales; on comprend bien que la ligne droite résultant de cette interpolation n'a pas la signification qu'elle a dans les cas où les intervalles sont réellement égaux, par exemple, dans une série dite de temps. De même, il ne faut pas confondre « l'erreur probable » qui résulte de notre calcul avec la mesure de l'approximation entre la ligne interpolée et le mouvement réel du phénomène.

Figure N° 18.

ITALIE.

Les régions italiennes sont alignées par ordre d'indice céphalique croissant (ligne pointillée continue). On voit que les taux correspondants de mortalité par le cancer (hommes âgés de 20 ans et plus, ligne brisée) prennent une allure croissante.



droite est de 4 fois et demi environ plus grand que son « erreur ». Il y aurait donc lieu de croire, peut-être, que la déviation de la ligne droite, telle que nous l'avons obtenue, d'une ligne horizontale, n'est pas accidentelle.

* * *

Voici encore une méthode parmi les plus simples et les plus rapides, pour une première étude de deux séries (anthropologique ou raciale, d'une part; de mortalité par le cancer, d'autre part), sans toutefois vouloir l'appliquer à toutes nos séries.

En répartissant dans les quatre « cadrans » d'un carré les données relatives à l'indice céphalique et la mortalité par cancer des seize régions italiennes (mortalité des hommes âgés de 20 ans et plus) nous aurons les quatre « cadrans » suivants:

Mortalité par le cancer et indice céphalique en Italie. Mortalité des hommes de 20 ans et plus. Les chiffres de chaque carré indiquent le nombre de régions qui ont simultanément l'indice céphalique et la mortalité par cancer indiqués par les têtes de colonne.

		Indice céphalique	
		Supérieur à l'indice médian [1]	Inférieur à l'indice médian [1]
Mortalité par le cancer	Supérieure à la mortalité médiane [2]	7	1
	Inférieure à la mortalité médiane [2]	1	7

On voit immédiatement qu'il existe une association entre les variables qui occupent les « cadrans » qui ont pour tête de colonne: indice supérieur et mortalité supérieure, d'une part, et: indice inférieur et mortalité inférieure de l'autre. En calculant les chiffres *théoriques* de chaque « cadran », on aura pour le premier « cadran », en haut, à gauche, $\frac{8 \times 8}{16} = 4$, et de même pour les autres « cadrans ». C'est-à-dire que dans les deux « cadrans » où l'on trouve marqué 7 et 7, le nombre des associations effectives est *supérieur* à celui des associations théoriques, et *vice versa*.

* * *

Une autre méthode simple et rapide pour se faire une idée du degré d'association de deux variables consiste à calculer l'indice dit des rangs.

Si l'on place les seize régions par ordre croissant d'indice céphalique en donnant à chaque région un numéro d'ordre, 1, 2, 3... 16, et si l'on inscrit en face de chaque région le numéro d'ordre de chaque mortalité correspondante, les deux séries de numéros d'ordre correspondent-elles ? La formule des rangs $\rho = 1 - \frac{6(\Sigma d^2)}{N(N^2 - 1)}$ nous donne, pour les deux séries: indice céphalique et mortalité des sujets âgés de 20 ans et plus, $1 - 0{,}107 = 0{,}893$ pour les hommes et $1 - 0{,}309 = 0{,}691$ pour les femmes, indiquant que les deux séries (indice céphalique et mortalité) se disposent presque dans le même ordre. Si la disposition

[1] L'indice céphalique *médian* est $\frac{82{,}1 + 82{,}3}{2} = 82{,}2$.

[2] Le taux *médian* de mortalité est $\frac{93 + 115}{2} = 104$.

avait été *absolument* pareille (indice croissant, mortalité croissante), le résultat de notre calcul auraitété = 1. Le résultat 0,893, ou 0,691, est assez près de 1 [1].

* * *

Quoique le nombre des éléments composant nos séries (seize régions) soit peut-être trop bas pour le calcul du coefficient de corrélation de Bravais, $r = \frac{\Sigma (xy)}{n \sigma_1 \sigma_2}$, et quoique on puisse discuter sur l'opportunité de l'usage de ce coefficient dans le cas que nous envisageons, voici le résultat du calcul de r pour la mesure du degré de corrélation entre la série formée par l'indice céphalique des seize régions et celle formée par la mortalité due au cancer chez les individus de 40 ans et plus. La valeur de la variabilité σ est de 2,43 pour l'indice céphalique (c'est-à-dire que cette valeur mesure le degré d'hétérogénéité des régions italiennes quant à l'indice céphalique), et de 72,3 pour la mortalité (pour 100.000 individus de 40 ans et plus). La somme des produits des écarts $\Sigma (x\ y)$ est de 1.767. Par conséquence $r = \frac{1.767}{2.811} = 0{,}63$. L'erreur probable de ce coefficient de corrélation est assez basse; elle résulte de 0,102 [2], de sorte que le coefficient en question résulte

$$r = 0{,}63 \pm 0{,}102.$$

Cela pourrait indiquer l'existence d'une corrélation significative, positive ou d'ordre direct, ou du même signe, entre l'augmentation (ou la diminution) de l'indice céphalique et l'augmentation (ou la diminution) de la mortalité par le cancer.

IV.

Pourcentage de crânes dolichomorphes et de crânes brachymorphes dans chaque région d'Italie, et mortalité correspondante par le cancer.

Nous avons montré déjà (paragraphe VIII de notre Chapitre I) que l'indice céphalique *moyen* de chaque zone risque de donner des indications plus ou moins inexactes sur la composition raciale de ces zones, et nous ajoutions qu'il vaut mieux se servir (lorsque la chose est possible) du pourcentage, dans chaque zone, de crânes brachymorphes ou dolichomorphes. L'*Antropometria militare italiana* permet de calculer ces pourcentages. Calculons donc pour chaque région le pourcentage d'individus qui présentent un indice céphalique de 82 et plus. Ce seront les *brachymorphes*. Nous calculerons également le pourcentage d'individus dont l'indice céphalique est inférieur à 82; ce seront les *dolichomorphes*.

---

[1] Dans le calcul de ρ, lorsque deux régions présentent le même taux, nous donnons à chacune d'elles le même numéro d'ordre; puis la région qui vient immédiatement après reçoit un numéro d'ordre supérieur de *deux* unités.

[2] L'erreur probable du coefficient de corrélation r est donnée par $0{,}6745 \frac{(1 - r^2)}{\sqrt{n}}$

Les résultats de nos calculs et les moyennes des taux correspondants de mortalité par le cancer sont indiqués dans le tableau suivant. Nous nous limiterons, en ce qui touche la mortalité, aux séries des individus âgés de 20 ans et plus.

Les résultats sont absolument les mêmes que ceux déjà obtenus en comparant la série croissante des indices céphaliques moyens à la série de la mortalité. Les moyennes de la mortalité, pour chacun des quatre groupes, restent les mêmes. C'est que chacun des quatre groupes d'indices céphaliques croissants embrasse les même régions que chaque groupe de pourcentages croissants de brachymorphes.

Pourcentages de crânes brachymorphes (82 et plus sur le vivant) en *ordre croissant* dans les seize régions italiennes				Moyennes des taux correspondants de mortalité par le cancer		Taux moyens de mortalité d'après les chiffres absolus des décès et de la population	
				Hommes de 20 ans et plus	Femmes de 20 ans et plus	Hommes de 20 ans et plus	Femmes de 20 ans et plus
15,2	19,9	28,9	32,3	57	82	58	86
42,2	43,5	47,1	53,2	79 [1]	104 [2]	78	103
57,8	59,8	71,7	74,4	131	148	146	160
81,3	84,1	84,4	87,9	149	154	149	153

Pourcentages de crânes dolichomorphes (indice inférieur à 82 sur le vivant) en *ordre croissant* dans les seize régions italiennes				Moyennes des taux correspondants de mortalité par le cancer (hommes de 20 ans et plus)	Taux de mortalité d'après les chiffres absolus des décès et de la population
12,1	15,6	15,9	18,7	149	149
25,6	28,3	40,2	42,2	131	146
46,8	52,9	56,5	57,8	79 [1]	78
67,7	71,1	80,1	84,8	57	58

V.

Pourcentage du type brun et du type blond dans chaque région et mortalité correspondante par le cancer.

L'*Antropometria militare italiana* donne le pourcentage des individus de *type brun* et celui des individus de *type blond* dans chacune des seize régions italiennes [3]. Or, si

[1] 64, si l'on écarte la mortalité du Latium.

[2] 85, si l'on écarte la mortalité du Latium.

[3] L'*Antropometria militare italiana* calcule ces pourcentages de manière suivante: Si, dans une région déterminée, le Piémont, 12,4 pour cent d'individus ont des cheveux blonds, et 13,6 pour cent les yeux bleus, la moitié de la somme de ces deux pourcentages donnera le pourcentage de *types blonds:* 13,0%. De même, en Sicile, le pourcentage des individus de *type blond* est $\frac{5,0 + 7,7}{2} = 6,3\%$. Nous adopterons cette méthode d'évaluation des types blonds ou bruns, sans en faire la critique. Le *type brun* résulte, également, de la moitié de la somme des pourcentages de cheveux noirs et yeux châtain foncé et très foncé. En Sicile, $\frac{38,3 + 76,3}{2} = 57,3\%$.

l'on met en regard de la série des régions italiennes rangées par ordre croissant de leurs pourcentages en *types brun* ou *blond*, la mortalité correspondante par le cancer, on obtient les tableaux suivants:

Pourcentages croissants de type brun				Moyennes des mortalités correspondantes		Taux de mortalité d'après les chiffres absolus des décès et de la population	
				Hommes de 20 ans et plus	Femmes de 20 ans et plus	Hommes de 20 ans et plus	Femmes de 20 ans et plus
41,5%	41,8	44,5	47,6	136	150	140	148
47,7	48,7	49,0	50,2	145	153	162	168
50,8	52,9	54,7	55,2	78 [1]	105 [2]	72	100
56,0	57,3	62,2	70,4	58	80	60	85

Les mêmes moyennes et les mêmes taux se présentent, si le calcul est fait en prenant, comme répartition des régions en quatre groupes, le pourcentage du type blond. En effet, chacun de ces quatre groupes se compose des mêmes régions, que l'arrangement se fasse soit par ordre croissant de types blonds, soit par ordre décroissant de types bruns.

Certes, on peut constater que, dans l'allure générale il y a coïncidence entre l'augmentation du taux de cancérosité et la diminution du pourcentage du type brun, ou l'augmentation du type blond, mais on remarquera encore une fois qu'un des groupes (le deuxième) fait exception à l'allure régulière de la diminution de la mortalité: c'est le groupe formé par la Toscane, l'Ombrie, les Marches et l'Emilie (la Toscane et l'Emilie sont des régions où la mortalité par le cancer est la plus élevée). Il n'en reste pas moins vrai que les deux premiers groupes ont une mortalité plus élevée que celle des deux derniers groupes.

L'indice des rangs, calculé sur la série des régions échelonnées d'après l'ordre croissant de types bruns, et sur la série correspondante de mortalité par le cancer, est de — 0,78 pour la mortalité des hommes et de — 0,72 pour la mortalité des femmes (20 ans et plus), ce qui indiquerait une disposition inverse des deux séries. La disposition inverse parfaite aurait donné — 1.

Nous répéterons ici le calcul du coefficient de corrélation de Bravais, pour la répartition géographique du type brun et celle de la mortalité par cancer (les deux sexes réunis, âgés de 40 ans et plus). La valeur de σ est de 7,2 pour le type brun, et de 72,3 pour la mortalité. La somme des produits des écarts $\Sigma(xy)$ est de — 4.968. Par conséquent, $r = -\frac{4.968}{8.329} = -0{,}60$. L'erreur probable de ce coefficient de corrélation est 0,108; de sorte que le coefficient en question s'écrit:

$$r = -0{,}60 \pm 0{,}108,$$

nous laissant soupçonner l'existence d'une corrélation inverse entre la mortalité par cancer et la fréquence du type brun.

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[1] 62, si l'on écarte la mortalité du Latium.
[2] 88, si l'on écarte la mortalité du Latium.

VI.

Taille moyenne et mortalité par le cancer.

La taille considérée isolément n'a pas une très grande valeur dans nos recherches. Il faut l'associer aux autres caractères physiques et physiologiques. Cependant, voici le résultat que donne la comparaison entre la répartition régionale de la taille en Italie et la répartition correspondante de la mortalité par le cancer. Cette comparaison est faite d'après la méthode déjà indiquée. La taille est celle des soldats âgés de 20 ans [1]:

Taille moyenne dans chaque région, en ordre croissant				Moyenne des taux correspondants de mortalité par le cancer		Taux de mortalité d'après les chiffres absolus des décès et de la population	
				Hommes de 20 ans et plus	Femmes de 20 ans et plus	Hommes de 20 ans et plus	Femmes de 20 ans et plus
162,1	162,7	163,4	163,4	60	78	60	79
163,7	163,7	163,7	163,9	77	96	67	95
164,4	164,4	165,0	165,4	129 [2]	151 [3]	136	157
165,4	165,6	165,7	166,6	151	160	156	157

Ici aussi, la mortalité tend à s'élever avec la taille: les deux premiers groupes (tailles les plus basses) ont une mortalité *moindre* que les deux derniers (tailles plus élevées).

Nous pourrions examiner, d'autre part, non pas la taille des *soldats* âgés de 20 ans, c'est-à-dire des recrues, mais celle des *conscrits* [4]. Voici le résultat de cette nouvelle recherche, pour laquelle nous nous limitons au calcul des moyennes des taux:

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[1] La taille dont nous donnons ici les mensurations est celle des *soldats* de 20 ans. Ce n'est donc pas celle des conscrits ou celle de la population masculine totale des classes d'âge adulte. Cependant, il y a un certain rapport entre ces différentes tailles. D'après Deniker, la taille de la population masculine totale adulte est presque la même que celle de la population masculine âgée de 22 ans, et si l'on veut avoir la taille à 22 ans, il suffirait d'ajouter un centimètre à celle des *conscrits* (nous disons conscrits, et non pas recrues); voir J. Deniker (dans *Journal of Anthropological Institute of Great Britain and Ireland*, 1904, p. 194). A son tour, et toujours d'après Deniker, la taille des *conscrits* est inférieure à peu près d'un centimètre à celle des *recrues* de 20 ans (soldats de 20 ans); donc, cette dernière donnerait la mesure de la population totale masculine adulte. D'après Giuffrida- Ruggieri, le rapport entre la taille des conscrits et celle des recrues, du moins pour les différentes régions de l'Italie, ne serait pas aussi simple que le croyait Deniker, puisque la différence entre la taille des *conscrits* et celle des recrues dépasse, dans certaines régions, 2 et 3 centimètres (dans la « Rivista geografica italiana », Firenze, IX, 1905). Ces régions sont les régions du Midi, dont nous avons indiqué depuis longtemps les indices de pauvreté biologique et économique; A. Niceforo, *Italiani del Nord e Italiani del Sud*, Turin 1900 Par contre, et toujours d'après Giuffrida-Ruggieri *(Op. cit.)*, c'est la taille des *conscrits* qui correspondrait, en Italie, à peu près à la taille de la population masculine adulte totale. C'est pourquoi notre texte prend aussi en considération la taille moyenne régionale des *conscrits*.

[2] 130 sans le Latium.

[3] 148 sans le Latium.

[4] Voir, pour la répartition régionale de la taille des *conscrits*, la monographie de V. Giuffrida-Ruggieri, « Rivista geografica italiana », Firenze, 1905.

Classes de tailles en ordre croissant (conscrits)				Moyenne des taux correspondants de mortalité par le cancer	
				Hommes de 20 ans et plus	Femmes de 20 ans et plus
1,589	1,591	1,594	1,603	56	76
1,607	1,608	1,610	1,623	80	106
1,623	1,626	1,627	1,632	127	138
1,636	1,639	1,639	1,653	154	165

Les conclusions restent à peu près les mêmes. Nous pourrons ici calculer l'indice des rangs, qui donne (conscrits) 0,907 pour les rangs de la taille et de la mortalité masculine et 0,881 pour la taille et la mortalité féminine.

Nous pourrons aussi répéter pour la taille le calcul du coefficient r de corrélation; en posant, d'une part, la répartition de la taille des *soldats* dans les seize régions, et, de l'autre, la répartition de la mortalité par le cancer pour les deux sexes réunis, âgés de 40 ans et plus, on obtient: la variabilité de la taille, c'est-à-dire σ, est de 1,17; celle de la mortalité est de 72,3; la somme des produits des écarts, c'est-à-dire $\Sigma(xy)$ est 924, d'où: $r = \frac{924}{1.353}$. Il en résulte: $r = 0{,}68 \pm 0{,}100$. Ce qui indique une corrélation directe significative entre la taille et la mortalité des régions italiennes.

VII.

Pourcentage des individus présentant en même temps une petite taille et des crânes dolichomorphes, dans chaque région, et mortalité correspondante par le cancer.

La petite taille et la dolichocéphalie sont parmi les traits caractéristiques de l'*Homo mediterraneus* en Italie. Les chiffres de l'Anthropométrie militaire ne donnent pas, centimètre par centimètre et unité par unité, le pourcentage des individus présentant à la fois ces deux caractères dans chaque région, mais donnent les nombres absolus des individus présentant simultanément ces deux caractères entre certaines limites. Nous pourrons donc calculer pour chaque région le pourcentage des individus présentant simultanément une taille inférieure à 1 m. 65 et un indice céphalique inférieur à 80. Il aurait été préférable — pour isoler les dolichoméditerranéens — de s'arrêter à une taille un peu inférieure, et à un indice un peu supérieur, puisqu'il s'agit d'indices céphaliques pris sur le vivant, mais le classement fait par l'Anthropométrie nous oblige à adopter cette répartition. Les pourcentages ainsi obtenus nous donnent une idée du nombre relatif d'individus: *Homo mediterraneus*, présentant, d'une manière assez marquée, les caractères de la race. En plaçant en regard de la série croissante de ces pourcentages les taux correspondants de mortalité par le cancer, et en nous limitant à calculer les moyennes des taux, on obtient le tableau suivant:

Proportion (pour 1000) des individus présentant en même temps une taille inférieure à 1 m. 65 et un indice céphalique inférieur à 80 (dolichomorphes de petite taille) dans chacune des seize régions italiennes					Moyennes des taux correspondants de mortalité par le cancer	
					Hommes de 20 ans et plus	Femmes de 20 ans et plus
Groupe I	26 ‰	28	33	39	149	154
Groupe II	84	102	111	115	131	148
Groupe III	162	191	220	274	79 [1]	103 [2]
Groupe IV	307	327	428	559	57	82

[1] 64, si l'on écarte la mortalité du Latium. — [2] 85, si l'on écarte la mortalité du Latium.

Il est clair qu'au fur et à mesure que la proportion des individus *Homo mediterraneus* s'élève (cette proportion va d'un minimum de 26 pour mille dans la Vénétie à un maximum de 559 en Sardaigne), le taux de mortalité par le cancer diminue.

Et si l'on place en regard les deux séries et que l'on calcule l'indice des rangs, on trouve un indice de — 0,806 pour les hommes (de 20 ans et plus) et de — 0,675 pour les femmes (de 20 ans et plus). Ces indices sont très près de — 1, ce dernier chiffre indiquant l'inversion parfaite des deux séries.

Le calcul du coefficient de corrélation de Bravais r donne les valeurs suivantes. La variabilité σ pour la série des proportions d'individus ayant une taille inférieure à 1 m. 50 et un crâne d'indice inférieur à 80 est 151; la variabilité σ pour la série de la mortalité (les deux sexes réunis, 40 ans et plus) est 72,3; la somme des produits des écarts ($\Sigma\, xy$) est — 118.867. Par conséquent, on aura

$$r = \frac{-118.867}{174.676,8} = -0,68 \pm 0,106.$$

Ce coefficient — 0,68 ± 0,106 indique une corrélation inverse significative, entre le pourcentage d'hommes du type *mediterraneus* et la mortalité par le cancer.

VIII.

Les dolichomorphes du midi de l'Italie — « Homo mediterraneus » — ont-ils une moindre réceptivité pour le cancer ? Essai de contrôle de cette hypothèse par les zones dolichomorphes du centre et du nord de l'Italie.

De ce qui a été dit, résulterait-il que les dolichomorphes — *Homo mediterraneus* — présentent une moindre réceptivité pour le cancer ? Tandis que les brachymorphes, par contre, — *Homo alpinus* et *Homo dinaricus* — sont plus réceptifs ?

Il ne suffit pas de constater l'association de deux variables (race et cancer) pour passer à des conclusions trop hâtives. Supposons, en effet, que dans un pays donné, ou à une époque donnée, une grande mortalité par le cancer soit surtout due au fait que la sélection naturelle de la première enfance par mortalité est moins sévère et moins efficace[1]. En Italie, par exemple, la mortalité infantile est plus élevée dans le midi que dans le nord (et le nombre des survivants est moindre dans le midi que dans le nord). La répartition géographique de la mortalité par le cancer en Italie s'associe donc à celle de la mortalité infantile et de la survivance. Les races aussi sont différentes, ainsi que nous l'avons vu, du midi au nord, et si l'on s'arrêtait uniquement à la comparaison entre la race et la mortalité par cancer, on serait tenté d'attribuer au facteur « race » ce qui pourrait être attribué à la différence de sélection naturelle par mortalité infantile. Ce n'est qu'un exemple. On pourrait en donner d'autres et formuler d'autres hypothèses du même genre, toujours à propos de la répartition géographique du cancer.

Admettons, pour le moment, que l'on puisse s'arrêter à l'association entre le cancer et la race; nous avons un moyen de contrôler cette hypothèse, du moins, en partie: c'est l'étude des *îlots* ou *oasis* que présente une répartition géographique de la race. En effet, en Italie, dans le nord et dans le centre, qui sont brachymorphes, — *Homo alpinus* et *Homo dinaricus*, — on trouve quelques îlots ou oasis de populations dolychomorphes *(Homo mediterraneus)*; et dans le sud dolychomorphe, quelques îlots (quoique plus rares)

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[1] C'est l'idée que nous avons avancée dans notre rapport déjà cité sur le cancer de l'utérus et du sein, publié par la Section d'hygiène de la Société des Nations, Genève 1925.

de brachymorphes. Si le cancer est fonction de la race, ne devrions-nous pas nous attendre à ce que les *îlots*, qui se différencient de la population environnante par la race, s'en différencient aussi par leur taux de mortalité due au cancer ?

Nous savons bien que nous n'arriverons pas ainsi à la certitude, car les « facteurs » qui exercent leur influence sur un taux de mortalité par une cause déterminée de décès sont tellement complexes qu'il se pourrait que quelques-uns d'entre eux viennent contrecarrer dans ces *îlots* l'influence de la race sur le cancer. Il s'agirait de l'action de ce que nous avons appelé ailleurs des « interférences »: l'action d'une « loi » déterminée d'association est masquée par l'entrée en jeu d'autres « lois » et d'autres facteurs. Ces considérations n'empêchent cependant pas le chercheur de se servir de ce moyen de contrôle. Dans l'Italie du nord et du centre dont nous avons constaté la brachycéphalie, il existe deux zones dont la population représente des îlots dolichomorphes d'*Homo mediterraneus:* ce sont certaines provinces de la Toscane, et les deux provinces qui forment la Ligurie. Il suffit de regarder le cartogramme, à la page suivante, de l'indice céphalique de ces zones. Nous y faisons également figurer les provinces limitrophes pour que les lecteurs saisissent mieux l'importance du fait que nous venons d'indiquer. Le tableau suivant, en outre, donnera certains détails nécessaires pour apprécier nos observations à leur juste valeur.

	Indice céphalique moyen [1]	Pourcentage de crânes brachymorphes (82 et plus) [2]	Pourcentage de crânes dolichomorphes [3]	Taux de mortalité par le cancer (par 10.000 habitants) (1909-1913) [4]
TOSCANE	*82,3*	*57,8*	*42,2*	
Provinces de la Toscane :				
Massa	80,3	39,4	**60,6**	7,06
Lucques	79,7	33,7	**66,3**	8,68
Pise	82,8	51,1	48,9	8,21
Livourne	79,6	31,1	**68,9**	9,94
Florence	83,1	65,3	34,1	10,94
Arezzo	83,9	75,5	24,5	9,91
Grosseto	83,0	65,6	34,4	8,73
Sienne	83,8	71,9	28,1	11,72
LIGURIE	*82,3*	*59,8*	*40,2*	
Provinces de la Ligurie :				
Gênes	82,4	60,2	39,8	7,55
Porto Maurizio	82,2	57,1	**42,9**	8,63

En consultant nos chiffres et notre cartogramme, on voit aisément qu'en Toscane, les provinces de Massa, de Lucques et de Livourne sont peuplées en majorité par des dolichomorphes, et les autres (Florence, Arezzo, Grosseto, Sienne) par des brachymorphes. Dans la province de Pise, les deux types sont presque également représentés.

Si le type dolichomorphe était moins réceptif au cancer, la Toscane, à demi brachycéphale, mais possédant un gros îlot de dolichomorphes, devrait avoir un taux de mortalité par le cancer relativement bas. *Il n'en est rien, puisque la Toscane est précisément une des régions où le taux de mortalité par le cancer est le plus élevé.*

La statistique italienne n'enregistre pas les décès au domicile habituel du défunt; s'il en était ainsi, nous pourrions pousser bien plus loin notre investigation et comparer

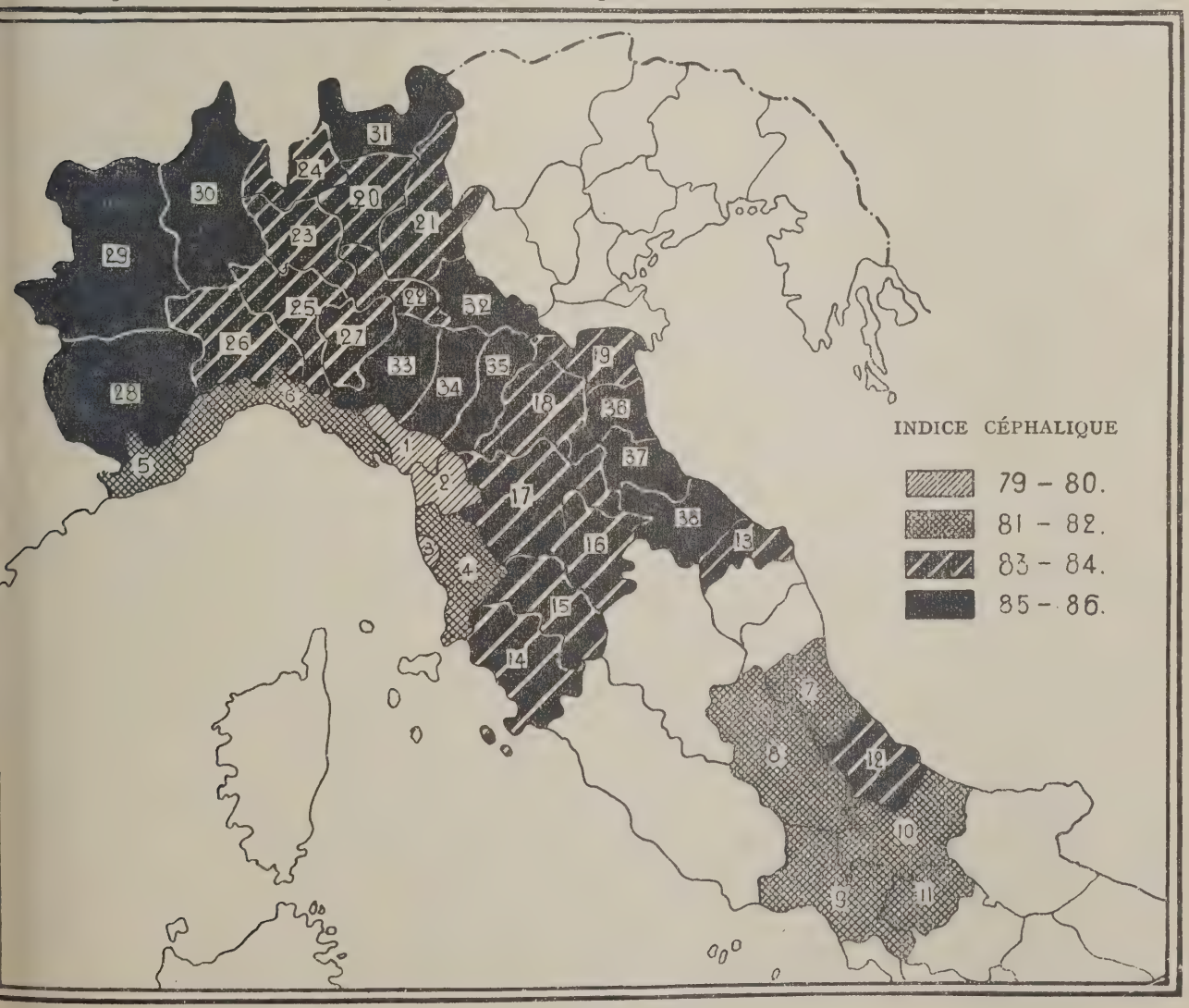
[1] D'après le tableau III *bis* de l'*Antropometria militare*, tome I.
[2] et [3] Calculés d'après les sériations de l'*Antropometria militare*, tome I, *id.*, *id.*
[4] Décès de 1909-1913 et population de 1911; taux calculés par G. SORMANI, 1918.

Figure N° 19.

ITALIE.

Indice céphalique moyen dans quelques provinces *de l'Italie.*

1. Massa
2. Lucques
3. Livourne
4. Pise
5. Porto Maurizio
6. Gênes
7. Teramo
8. Aquila
9. Caserta
10. Campobasso
11. Benevento
12. Chieti
13. Ancône
14. Grosseto
15. Sienne
16. Arezzo
17. Florence
18. Bologne
19. Ferrare
20. Bergame
21. Brescia
22. Crémone
23. Milan
24. Côme
25. Pavie
26. Alessandrie
27. Plaisance
28. Cunéo
29. Turin
30. Novare
31. Sondrio
32. Mantoue
33. Parme
34. Reggio d'Emilie
35. Modène
36. Ravenne
37. Forli
38. Pesaro



entre elles les *provinces* dolichomorphes et les *provinces* brachymorphes de la Toscane, quant à la mortalité par le cancer. Nous devons donc nous contenter d'interroger le taux de mortalité de la Toscane tout entière. Nous avons placé cependant, et à titre de simple renseignement, les taux de mortalité par *province* à côté des données anthropologiques de notre tableau.

Quant à la Ligurie, où les dolichomorphes sont aussi assez nombreux (voir encore le tableau, et la figure 19), on devrait s'attendre à y trouver une mortalité cancéreuse méridionale, c'est-à-dire assez basse. *Il n'en est rien ici non plus: le taux de mortalité par le cancer est assez élevé en Ligurie.*

En conclusion, les taux de mortalité par le cancer, en Toscane, où se trouve l'îlot dolichomorphe, et en Ligurie, qui est une région dolichomorphe environnée par des régions brachymorphes, au lieu de se rapprocher des taux du midi dolichomorphe, se rapprochent de ceux du nord brachymorphe, et même les dépassent.

Passons maintenant à l'îlot brachymorphe du sud dolichomorphe. Cet îlot a beaucoup moins d'importance que ceux que nous venons d'examiner; il est presque entièrement dans la province de Chieti; un coup d'œil à la figure 19 et au tableau ci-dessous en donnera une idée suffisamment exacte:

	Indice céphalique moyen [1]	Pourcentage des crânes brachymorphes [2]	Pourcentage des crânes dolichomorphes [3]	Taux de mortalité par le cancer par 10.000 hab. (1909-1913) [4]
Abruzzes et Molise. . . .	*81,9*	*53,2*	*46,8*	—
Provinces:				
Aquila	81,0	34,4	65,6	5,38
Chieti	83,3	**66,3**	33,7	4,50
Teramo	81,6	39,8	60,2	4,06
Campobasso (Molise) . . .	81,6	52,2	47,8	4,46

Ici également, les taux de mortalité par *province* ne sont donnés qu'à titre d'indication. Nous devons nous contenter d'observer que, en bloc, la région des Abruzzes et du Molise, où l'on trouve une certaine masse de brachymorphes, *au lieu de présenter un taux de mortalité voisin du taux du nord brachymorphe, présente un taux très bas, voisin de celui du midi dolichomorphe.* Il est vrai qu'un certain nombre des cancéreux de cette région meurent probablement à Rome et à Naples, et y sont enregistrés.

En conclusion, il ne ressort pas de ce premier contrôle que les brachymorphes ou les dolichomorphes conservent à peu près leur taux (élevé ou bas) de mortalité par le cancer dans les « îlots » italiens. Il est douteux, d'autre part, que le « mélange » de races brachymorphes du type *alpinus*, par exemple, avec des dolichomorphes du type *mediterraneus* cause une prédisposition plus marquée au cancer; mais il ne s'agirait en tout cas que d'un simple soupçon qu'il serait sage de contrôler. Nous savons que le mélange des races a été invoqué comme explication de bien des choses. Lombroso s'y était particulièrement attaché, et l'appelait « innesto di razze » (greffe de races). Il croyait que cette greffe pouvait donner comme résultat des formes plus actives et plus élevées d'intelligence et de civilisation et même des formes spéciales de criminalité [5]. Mais l'existence de ces rapports est loin d'être un fait bien établi.

[1], [2], [3], [4] Mêmes remarques que pour le tableau précédent.

[5] C. Lombroso: *L'Uomo delinquente*, 5me édition, Turin, 1897, page 200.

Troisième chapitre

Par le professeur Alfredo Niceforo.

LA RACE ET LE CANCER DANS LA PÉNINSULE IBÉRIQUE

I.

Répartition de la race en Espagne.

Parmi les indications numériques nécessaires à l'étude de la répartition géographique de la race: indice céphalique, taille, forme de la face, coloration des yeux et des cheveux, les données relatives à l'indice céphalique, surtout, sont assez satisfaisantes en Espagne. L'ouvrage bien connu du regretté professeur Oloriz, publié en 1894, porte sur l'indice céphalique de 8.368 Espagnols (indice sur le vivant) [1]. Depuis, L. de Hoyos Sainz a mesuré l'indice céphalique de 3.500 crânes espagnols [2]. Pour les données anthropométriques sur la taille, on peut rappeler encore une étude d'Oloriz, mais ses données les plus utilisables n'offrent que le pourcentage des hautes tailles (plus de 1^m710) et des petites tailles (moins de 1^m560) par province [3]. Les observations relatives à la coloration des yeux et des cheveux ne sont que fragmentaires. De bonnes études d'ensemble sur la forme du nez et de la face, sur le crâne, dans les différentes régions espagnoles, ont été faites par Hoyos Sainz, dans l'ouvrage déjà cité.

D'après ces recherches, nous savons:

1° Que l'Espagne présente une population assez homogène, du point de vue de la race, appartenant en bonne majorité au type méditerranéen dolichomorphe *(Homo mediterraneus)*;

2° Que cette population est en général de petite taille et de coloration foncée;

3° Qu'il y a, cependant, des différences régionales [4]; c'est de ces différences régionales que nous nous servirons de préférence pour l'étude de notre problème.

Quelles sont ces différences régionales ?

---

[1] F. Oloriz: *Distribución geográfica del índice cefálico en España*, Madrid, 1894.

[2] L. de Hoyos Sainz: *Caractères généraux des Crania hispanica*, « Comptes rendus du XIVe Congrès international d'anthropologie, Genève, 1912, tome 2, et *Caractéristiques générales des crânes espagnols*, « l'Anthropologie », XXXIV, 1913, page 430. Voir aussi, sur les dimensions du crâne espagnol: T. de Aranzadi: *Dimensiones de la calvaria en España*, etc., « Boletín de la Real Sociedad española de Historia Natural », juin 1915.

[3] F. Oloriz: *Discursos leidos en la R. Academia de Medicina*, mayo 1896; Madrid, 1896. (Voir surtout à la page 60.)

[4] W. Ripley: *The races of Europe*, London 1900, pages 273-275. Voir aussi le résumé substantiel que A. A. Mendes Correa fait des caractères anthropologiques des Espagnols dans son livre: *Raça e nacionalidade*, Porto (1919), au chapitre V: « Povos irmaos », page 97.

LISTE DES PROVINCES D'ESPAGNE

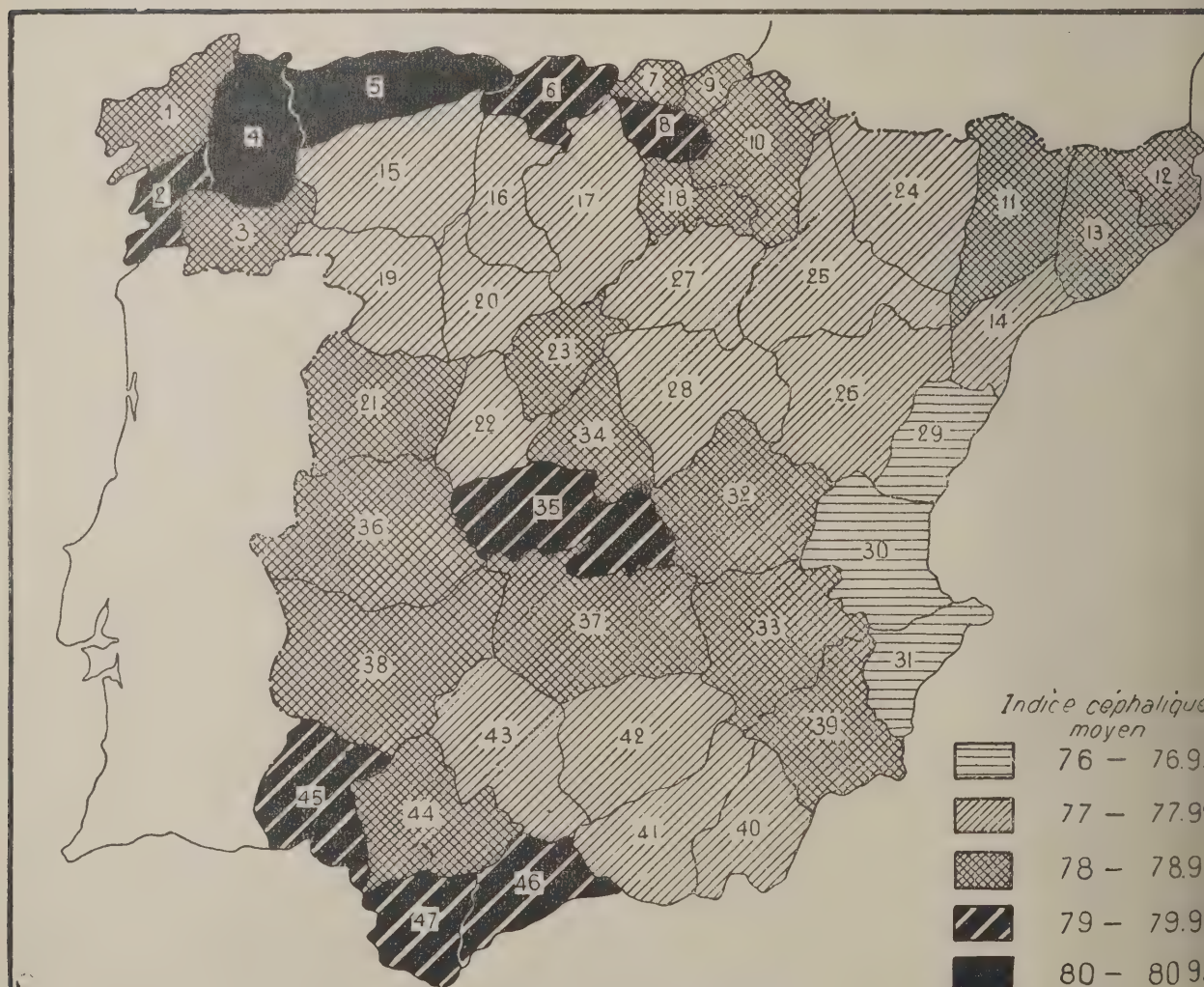
arrangées selon la numérotation employée sur les cartogrammes.

1. La Corogne	9. Guipúzcoa	17. Burgos	25. Saragosse	33. Albacete	41. Grenade
2. Pontevedra	10. Navarre	18. Logroño	26. Teruel	34. Madrid	42. Jaén
3. Orense	11. Lérida	19. Zamora	27. Soria	35. Tolède	43. Cordoue
4. Lugo	12. Gerona	20. Valladolid	28. Guadalajara	36. Cáceres	44. Séville
5. Oviédo	13. Barcelone	21. Salamanque	29. Castellón	37. Ciudad Real	45. Huelva
6. Santander	14. Tarragone	22. Ávila	30. Valence	38. Badajoz	46. Malaga
7. Biscaye	15. Léon	23. Ségovie	31. Alicante	39. Murcie	47. Cadix
8. Álava	16. Palencia	24. Huesca	32. Cuenca	40. Almeria	

Figure Nº 20.

ESPAGNE.

Répartition géographique de l'indice céphalique moyen.

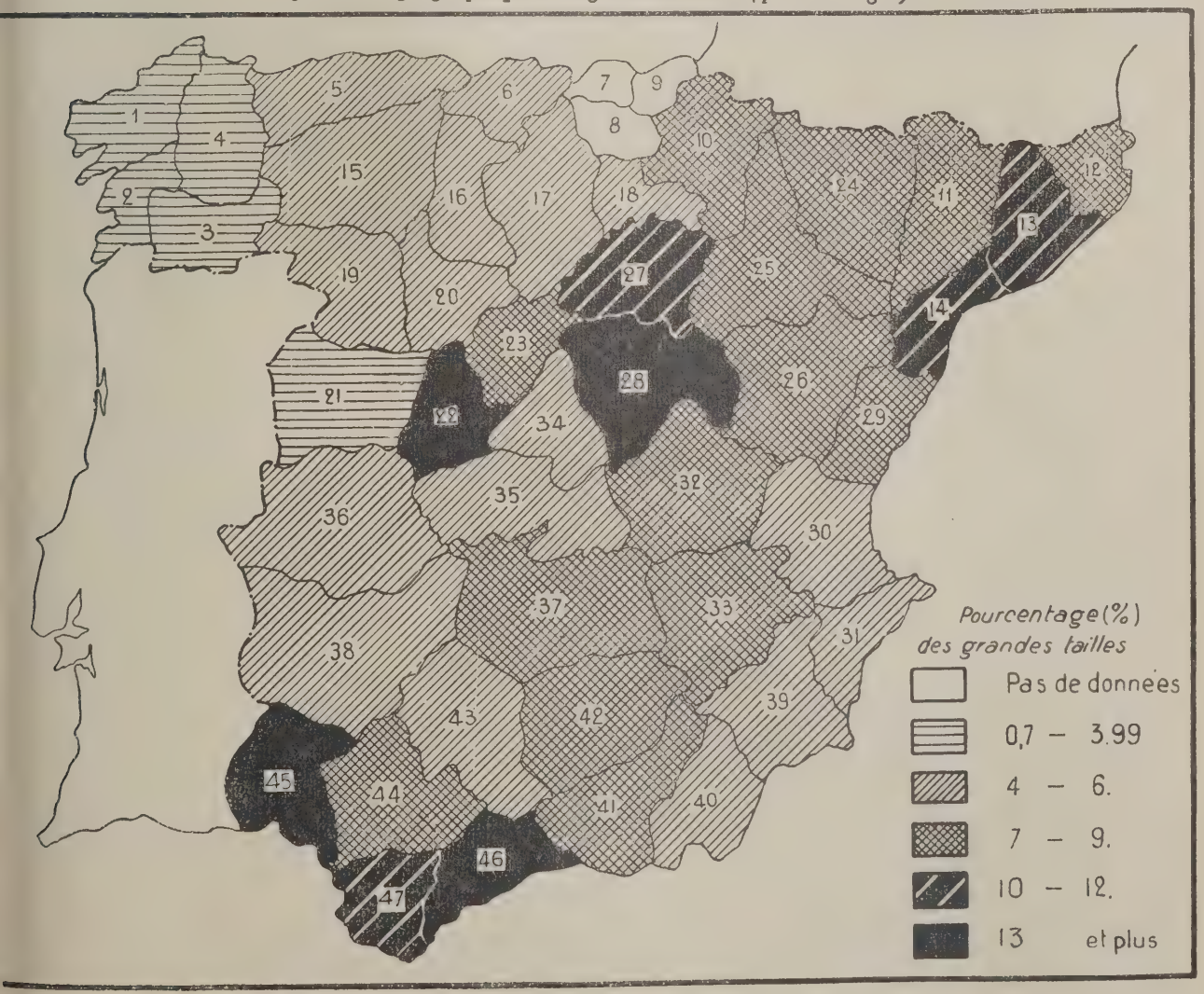


La répartition géographique des caractères anthropologiques des Espagnols peut être faite, d'après les matériaux que nous possédons, surtout pour l'indice céphalique, en calculant la moyenne, et parfois en formant la sériation, pour chacune des 47 *provinces* de l'Espagne. On pourra consulter, à ce sujet, la répartition de l'indice céphalique dans ces 47 provinces, dans notre figure 20, établie d'après les observations d'Oloriz (première colonne du tableau page 80). Nous plaçons également sous les yeux du lecteur le pourcentage et le cartogramme de la répartition *par province*, des grandes tailles (figure 21) d'après les données d'Oloriz.

Figure N° 21.

ESPAGNE.

Répartition géographique des grandes tailles (pourcentages).



Espagne.

Régions et provinces	Indice céphalique moyen de chaque *province*	Pourcentage des crânes brachy-morphes supérieurs à l'indice 80 dans chaque *région* [1]	Grandes tailles: pourcentage des tailles supérieures à 1 m. 71	Mortalité par le cancer par 10.000 habitants 1919–1921
Galicienne:		**36,1**		**6,34**
La Corogne	78,9		3,05	6,35
Pontevedra	79,0		2,78	7,76
Orense	78,5		2,75	4,54
Cantabrique:		**51,4**		**5,65**
Lugo	80,1		0,77	4,61
Oviédo	80,9		5,48	5,64
Santander	79,9		5,95	7,22
Vasco-Navarraise:		**33,7**		**6,66**
Biscaye	78,8		?	6,18
Alava	79,1		?	7,20
Guipúzcoa	78,8		?	7,00
Navarre	78,4		7,99	6,80
Catalane:		**24,4**		**7,98**
Lérida	78,5		7,02	4,91
Gerona	78,1		8,02	6,15
Barcelone	78,2		10,41	9,83
Tarragone	77,6		11,31	5,63
Castillane supérieure:		**20,5**		**7,08**
Léon	77,5		4,02	5,53
Palencia	77,6		5,49	7,71
Burgos	77,9		4,29	8,29
Logroño	78,0		23,54	6,64
Zamora	77,3		4,93	5,71
Valladolid	77,8		4,38	9,71
Salamanque	78,1		3,95	7,01
Avila	77,3		13,91	6,51
Ségovie	78,1		7,85	6,69
Aragonaise:		**17,9**		**5,99**
Huesca	77,0		9,18	4,22
Saragosse	77,4		8,19	7,30
Teruel	77,3		7,03	4,42
Soria	77,4		10,12	6,95
Guadalajara	77,7		14,53	6,35
Valencienne :		**11,4**		**4,93**
Castellón	76,7		7,87	4,90
Valence	76,9		4,43	5,20
Alicante	76,7		5,69	4,46

[1] D'après les sériations publiées par Oloriz à la page 146 de son ouvrage, déjà cité.

ESPAGNE *(suite)*.

Régions et provinces	Indice céphalique moyen de chaque *province*	Pourcentage des crânes brachymorphes supérieurs à l'indice 80 dans chaque *région*	Grandes tailles: pourcentage des tailles supérieures à 1 m. 71	Mortalité par le cancer par 10.000 habitants 1919-1921
CASTILLANE INFÉRIEURE:		**29,9**		**5,96**
Cuenca	78,5		8,68	4,62
Albacete	78,3		7,13	4,46
Madrid [1]	78,6		6,38	9,38
Tolède	79,3		6,20	5,08
Cáceres	78,5		4,83	4,57
Ciudad Real	78,1		9,86	5,18
Badajoz	78,3		6,30	3,95
HAUTE-ANDALOUSIE:		**21,8**		**4,55**
Murcie	78,0		4,69	4,43
Almeria	77,8		4,63	4,34
Grenade	77,9		9,16	4,77
Jaén	77,4		9,48	4,73
Cordoue	77,9		6,67	4,44
BASSE-ANDALOUSIE:		**36,9**		**6,39**
Séville	78,5		9,10	6,36
Huelva	79,1		16,67	5,20
Malaga	79,1		18,21	5,93
Cadix	79,5		12,22	7,80
ESPAGNE		**26,5**		**6,05** [2]

Pour nos comparaisons entre la race et la mortalité par le cancer, il nous faut des zones territoriales plus étendues que la *province*, et cela afin de diminuer autant que possible l'inconvénient que présente le système qui consiste à enregistrer les décès non pas au lieu du domicile habituel, mais là où le décès est survenu. L'Espagne peut être partagée en dix *régions*, pour chacune desquelles nous avons établi des taux et des pourcentages qui sont exposés dans le tableau pages 80-81. (Pour la répartition géographique de l'Espagne en « régions historiques », voir l'ouvrage d'Oloriz sur l'indice céphalique, etc., page 138.) Nous donnons également des cartogrammes indiquant la distribution *régionale* (et non plus provinciale) du pourcentage de crânes brachymorphes. Au lieu de prendre comme limite des crânes brachymorphes sur le vivant, l'indice 81,99, nous prendrons ici l'indice 79,99, d'après le groupement des sériations *régionales* que fait Oloriz à la page 146 de son ouvrage déjà cité. L'inconvénient n'est pas grave; il en résulte une augmentation du nombre des brachymorphes dans chaque région; mais comme nous cherchons moins le nombre absolu ou le pourcentage des brachymorphes (étrangers au type fondamental espagnol) de chaque région, que l'ordre hiérarchique de ces différentes régions par rapport au nombre de brachymorphes qu'elles présentent, ce pourcentage suffit à nous donner le renseignement en question.

[1] Province de Madrid. La ville a un indice de 77,9.

[2] Nombre absolu des décès, 38.044; moyenne annuelle des décès, 12.681; population moyenne, 20.947.274 (y compris les Canaries et les Baléares).

Liste des régions d'Espagne

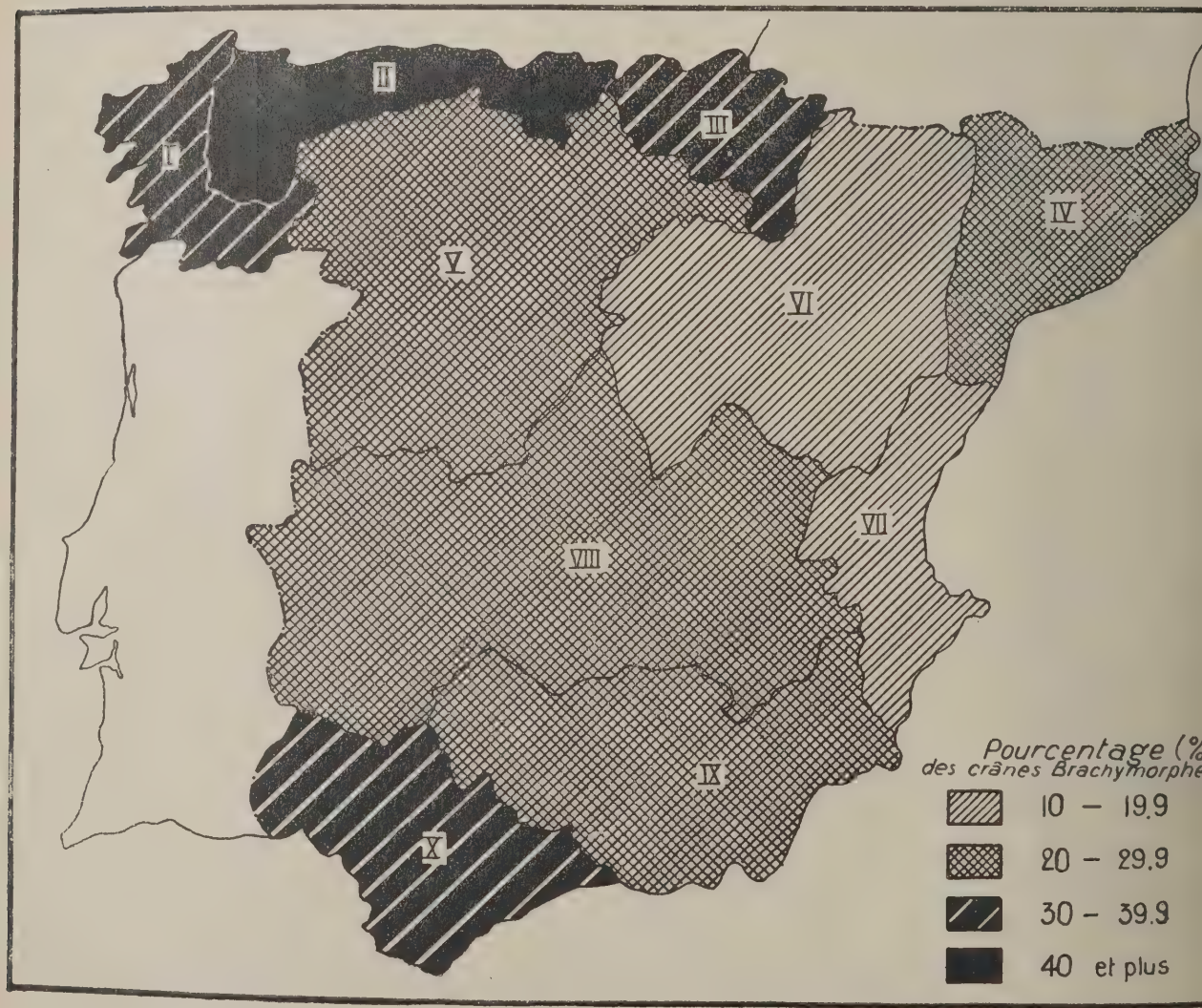
arrangées selon la numérotation employée dans les cartogrammes 22 et 24.

I.	Région	Galicienne	VI.	Région	Aragonaise
II.	»	Cantabrique	VII.	»	Valencienne
III.	»	Basque et de Navarre	VIII.	»	Castillane inférieure
IV.	»	Catalane	IX.	»	de Haute-Andalousie
V.	»	Castillane supérieure	X.	»	de Basse-Andalousie

Figure N° 22

Espagne.

Pourcentage des individus de crâne brachymorphe dans les grandes régions d'Espagne.



Du reste, l'ouvrage d'Oloriz présente aussi la sériation des indices céphaliques, unité par unité, dans chaque *région* (page 143) et dans chaque *province* (page 89) et permet ainsi de calculer le pourcentage des brachymorphes de 81,99 et plus. Nous y aurons recours dans quelques cas particuliers.

Si l'on regarde, pour commencer, la carte géographique de l'indice céphalique, on remarque immédiatement que sur le fond dolichomorphe des *provinces* espagnoles à indices céphaliques de 76, 77, 78,..... 78,99, se détache une zone où les brachymorphes doivent être assez nombreux, ou du moins plus nombreux que dans le reste de l'Espagne; ce sont les provinces du nord: Lugo et Oviédo, avec un indice moyen de 80 et plus, et celles de Pontevedra et de Santander, avec un indice de 79 et plus. En regardant la carte géographique par *régions*, d'ailleurs, on constate que ce sont les deux régions du nord: région *galicienne* et région *cantabrique* (cette dernière surtout) où les brachymorphes doivent se trouver le plus nombreux. En effet, si l'on s'arrête aux indices de 80 et plus, on trouve, pour l'Espagne entière, 26,5 % d'individus présentant ces indices; mais on trouve 36,1 % pour la région galicienne et 51,4 % pour la région cantabrique.

On trouve, en outre, dans le midi de l'Espagne, une zone où les brachymorphes doivent être en nombre relativement élevé (quoique ce nombre n'atteigne pas celui des provinces de Lugo et d'Oviédo): ce sont les provinces de Huelva, de Cadix et de Malaga, qui composent (avec Séville) la région de la Basse-Andalousie.

En somme, les dolichomorphes peuplent l'Espagne en très grande majorité, mais on trouve au nord des zones qu'on peut considérer comme zones d'exception: les zones galicienne et cantabrique; il en existe aussi au midi, quoique sous une forme atténuée: la Basse-Andalousie. Par contre, les dolichomorphes forment la presque totalité des habitants des provinces de Castellón, de Valence, d'Alicante (indices de 76,7 et de 76,9) le long de la Méditerranée, provinces qui constituent la région valencienne.

C'est sur ces zones spéciales, et surtout sur les régions galicienne et cantabrique, que doit se porter notre attention.

Par les études déjà citées sur l'anthropologie du peuple espagnol, nous savons:

1. Que les dolichomorphes espagnols sont, en grande majorité, du type méditerranéen *Homo mediterraneus* — de petite taille; on y trouve, il est vrai, une certaine quantité de tailles assez élevées (Deniker) dans certaines zones (catalane et valencienne). En étudiant de plus près cette population dolichomorphe, on trouve encore quelques anomalies: par exemple, des individus qui, tout en ayant la face assez allongée (leptoprosope), ont parfois le nez de forme élargie (plathyrrinien), ce que Hoyos Sainz attribue à des mélanges africains.

2. Que les zones d'exception renferment probablement un bon nombre de spécimens de l'*Homo alpinus*. Le professeur Hoyos Sainz en étudiant les crânes de la région cantabrique parle du crâne « platicéphale et brachycéphale cantabrique », présentant aussi une face large et plutôt écrasée (face que les anthropologistes appellent face caméprosope de la région cantabrique et galaïque).

Or, puisque nous avons soupçonné — à propos de l'Italie — que de l'*Homo mediterraneus* et de l'*Homo alpinus* c'est ce dernier qui serait le plus frappé par le cancer, il serait tout naturel de rechercher si les différentes régions de l'Espagne confirment cette supposition. Mais des graves difficultés se présentent ici lorsqu'on s'efforce d'étudier la répartition de la mortalité par le cancer. C'est d'abord la méthode d'enregistrement des décès (lieu du décès et non demeure habituelle du décédé), de telle sorte que l'attraction des villes où les moyens d'assistance sont plus nombreux fait sentir son influence sur la répartition géographique, et nous ne sommes pas sûrs que cet inconvénient puisse être diminué par le groupement des provinces en régions, ainsi que nous l'avons fait pour l'Italie. Ensuite, il faut remarquer que le nombre des causes de décès figurant sous la rubrique « causes inconnues ou mal définies » varie sensiblement d'une région à l'autre et que, si elles ne

constituent que le 0,7 ou le 1,2 pour cent des décès à Madrid, à Barcelone et ailleurs, elles montent à des chiffres assez élevés dans d'autres zones. Le taux de mortalité par causes inconnues ou mal définies est, par exemple, de 2 pour 10.000 habitants, dans la région valencienne, mais il monte à 9 dans la région castillane supérieure et dans la région cantabrique. Certes, il ne faudrait pas croire que le nombre des décès par causes inconnues doive venir s'ajouter au nombre des décès par le cancer de la région, mais ce taux peut indiquer le soin avec lequel, dans chaque région, on établit le certificat de décès, ou plus exactement le diagnostic qui y figure.

Nous aurons, du reste, l'occasion de revenir sur ce point, qui ne concerne pas seulement le pays dont nous nous occupons ici, mais qui a une importance générale pour l'établissement d'une géographie du cancer.

II.

Comparaison entre la géographie du cancer et la géographie de la race en Espagne.

La figure 23 ci-après indique la répartition géographique de la mortalité par le cancer *par provinces*, en Espagne et dans le tableau ci-dessous on trouvera les chiffres correspondants.

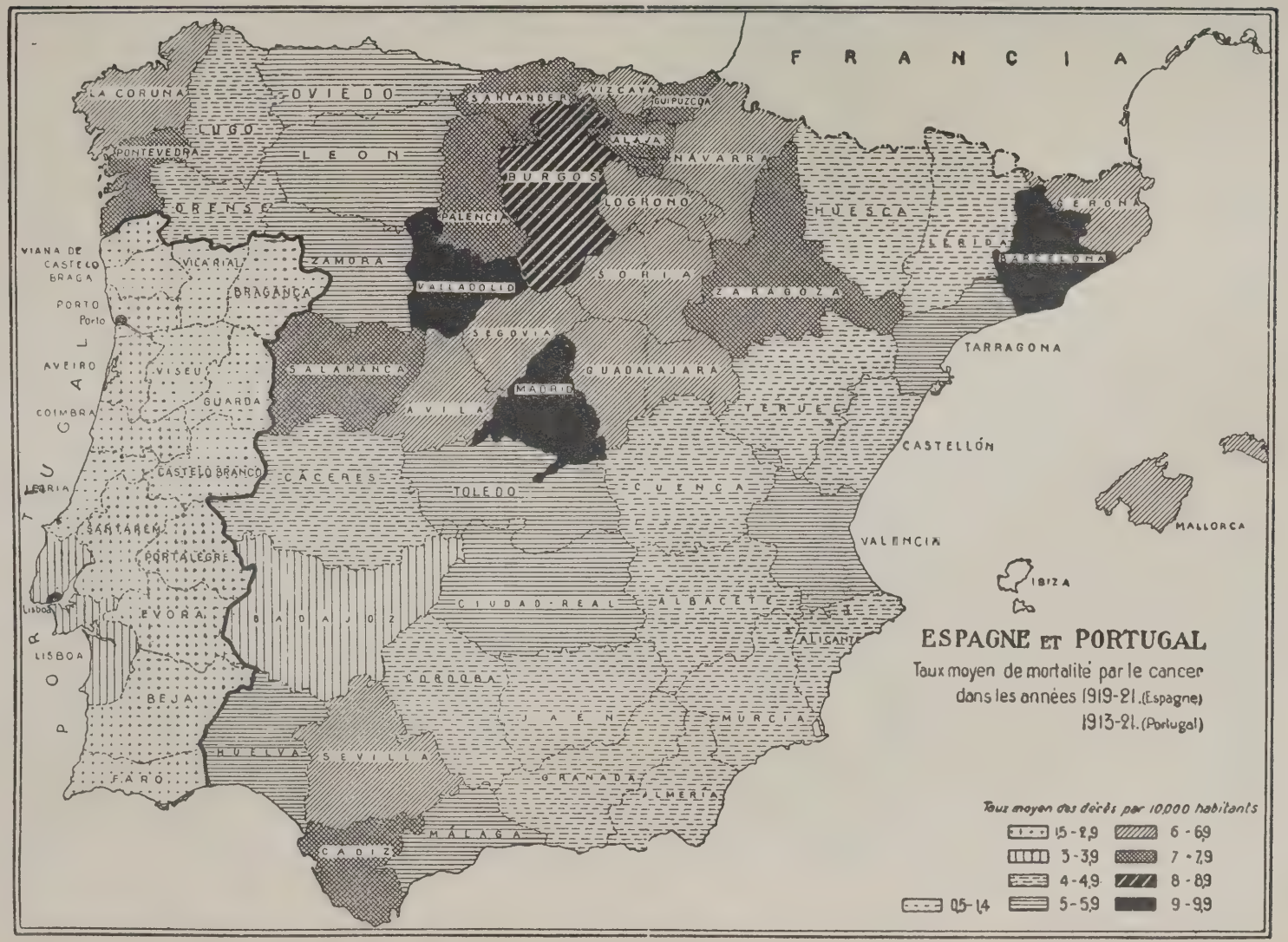
Mortalité par le cancer dans les différentes provinces de l'Espagne pour 10.000 habitants, pendant la période de 1919 à 1921.

Provinces avec capitales	Nombre absolu	Moyenne annuelle	Population moyenne	Taux pour 10.000 habitants	Provinces avec capitales	Nombre absolu	Moyenne annuelle	Population moyenne	Taux pour 10.000 habitants
Alava . . .	211	70,3	97.564,3	7,20	Léon	662	220,6	398.959,6	5,53
Albacete . .	387	129,–	289.046,–	4,46	Lérida . . .	442	147,3	300.225,6	4,91
Alicante . .	672	224,–	502.063,6	4,46	Logroño . .	371	123,6	186,185,3	6,64
Almeria . .	491	163,7	377.422,3	4,34	Lugo	655	218,3	473.340,6	4,61
Avila . . .	411	137,–	210.297,6	6,51	Madrid . .	2.803	934,3	996.350,6	9,38
Badajoz . .	766	255,3	646.094,–	3,95	Malaga . .	955	318,3	536.668,3	5,93
Baléares . .	611	203,6	333.324,–	6,11	Murcie . . .	840	280,–	633.244,3	4,42
Barcelone . .	3.675	1.225,–	1 245.798,3	9,83	Navarre . .	654	218,–	320.695,–	6,80
Biscaye . .	726	242,–	391.327,3	6,18	Orense . . .	559	186,3	410.209,3	4,54
Burgos . . .	853	284,3	342.995,6	8,29	Oviédo . . .	1.228	409,3	725.641,6	5,64
Cáceres . . .	574	191,3	418.504,–	4,57	Palencia . .	451	150,3	194.917,6	7,71
Cadix . . .	1.113	371,–	475.822,8	7,80	Pontevedra .	1.213	404,3	521.211,6	7,76
Canaries . .	596	198,6	517.237,5	3,84	Salamanque .	690	230,–	329.619,–	7,01
Castellón . .	460	153,3	312.658,6	4,90	Santander .	703	234,3	324.452,3	7,22
Ciudad-Real	669	223,–	429.533,3	5,18	Saragosse . .	1.058	352,6	483.126,3	7,30
Cordoue . .	731	243,6	548.396,3	4,44	Ségovie . . .	341	113,6	169.682,6	6,69
Corogne . .	1.327	442,3	696.727,6	6,35	Séville . . .	1.244	414,6	651.436,6	6,36
Cuenca . .	393	131,–	283.642,3	4,62	Soria	325	108.3	155.666,–	6,95
Gerona . .	608	202,6	329.282,–	6,15	Tarragone .	557	185,6	329.596,–	5,63
Grenade . .	792	264,–	553.846,3	4,77	Teruel . . .	337	112,3	253.980,–	4,42
Guadalajara	400	133,3	210.026,–	6,35	Tolède . . .	676	225,3	443.081,–	5,08
Guipúzcoa .	534	178,–	254.210,3	7,00	Valence . .	1.442	480,6	924.197,–	5,20
Huelva . . .	531	177,–	340.109,–	5,20	Valladolid .	823	274,3	282.243,3	9,71
Huesca . . .	314	104,3	246.966,3	4,22	Zamora . .	454	151,3	264.575,–	5,71
Jaén	716	273,–	575.346,3	4,73	*Espagne .*	*38.044*	*12.681,3*	*20.94.7274,3*	*6,05*

Figure Nº 23.

ESPAGNE ET PORTUGAL.

Répartition géographique par provinces *de la mortalité par le cancer, pour 10.000 habitants.*
Période 1919-1921 pour l'Espagne, et 1913-1921 pour le Portugal.

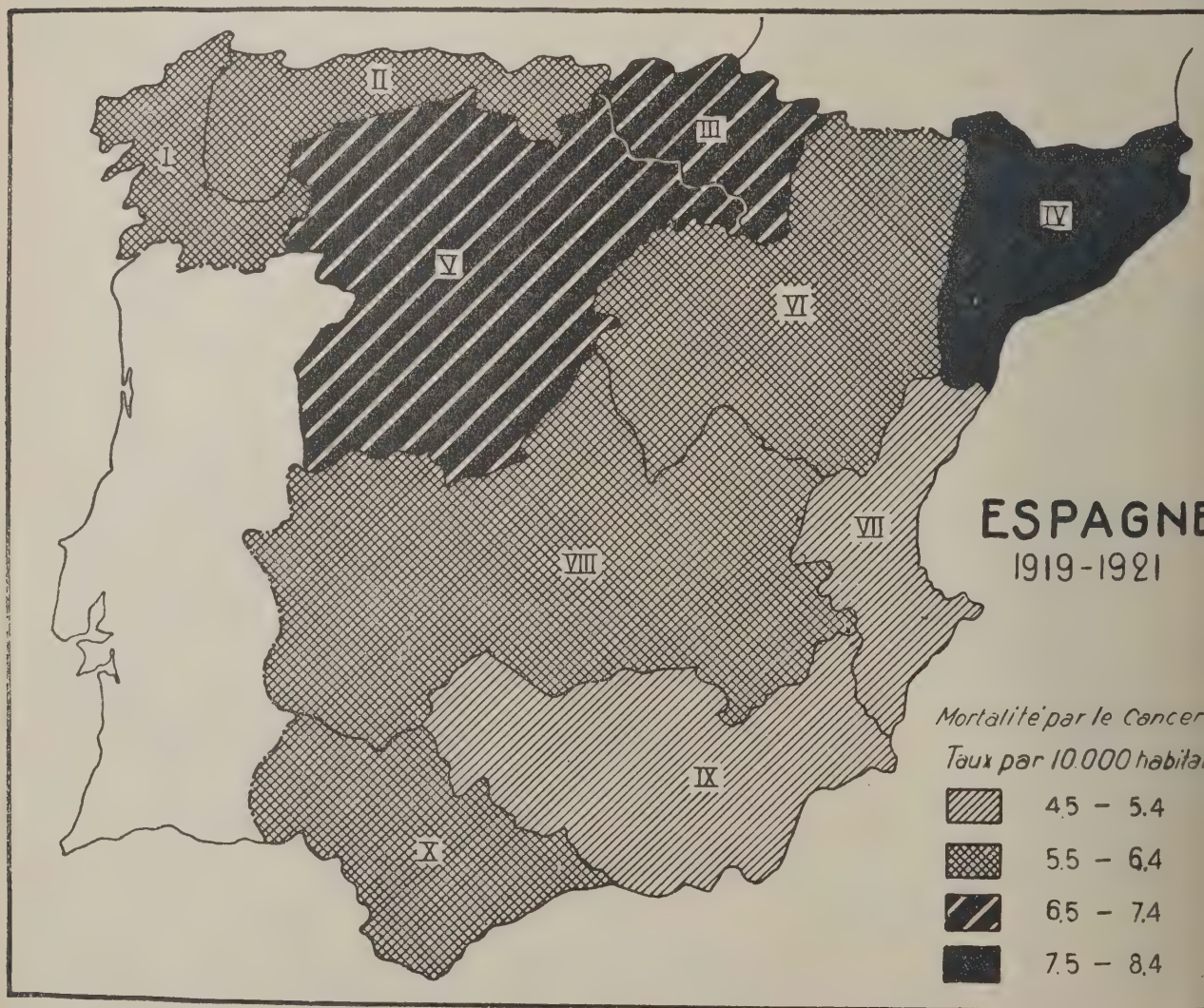


Mais nous avons déjà dit que nous devons choisir des zones plus vastes, telles que la région; nous avons donc calculé, d'après les chiffres absolus des décès par le cancer et de la population *de chaque région,* des taux de mortalité régionale. Ils sont traduits dans la figure 24.

Figure N° 24.

ESPAGNE.

Répartition géographique par régions *de la mortalité par le cancer pour 10.000 habitants, période 1919-1921.*



En consultant nos chiffres et les figures, on pourrait observer, en premier lieu, que la mortalité par le cancer pour l'Espagne tout entière est plutôt basse. Elle n'est que de 6 pour dix mille habitants (de tout âge et des deux sexes) — (période 1919–21). La mortalité italienne pour la même période est légèrement supérieure (7,1).

Nous savons que d'autres pays — centre et nord de l'Europe — ont eu des taux de mortalité par cancer bien plus élevés: 10 en Hollande, 10 en Ecosse, 9,8 en Angleterre, 9,6 en Norvège, 8 en France, etc., au cours de la période qui précéda immédiatement la guerre; ces taux deviennent sensiblement plus élevés pour la période 1919–1921. On pourrait donc se demander si des taux de mortalité aussi bas ne sont pas dus au fait que l'Italie et l'Espagne (l'Espagne beaucoup plus que l'Italie), sont des pays où les dolichomorphes méditerranéens sont très abondants. Il s'agirait là d'une supposition trop hypothétique pour qu'on puisse la prendre immédiatement en considération, et les raisons qui nous empêchent de nous arrêter à cette idée sont évidentes.

Comparons plutôt les régions nettement dolichomorphes de l'Espagne aux autres régions du même pays, du point de vue du cancer.

La première méthode consistera à placer les dix régions de l'Espagne par ordre de pourcentage d'éléments dolichomorphes ou même brachymorphes que chacune d'elles présente et à établir l'ordre que prendront alors, pour chaque région, les taux respectifs de mortalité par le cancer. Voici le tableau qui résulte de ce calcul:

Mortalité par le cancer, et répartition de la race dans les dix régions espagnoles.

Régions espagnoles	Pourcentage des individus présentant un indice céphalique de 80 et plus (probablement, en majorité brachymorphes)	Mortalité par le cancer pour 10.000 habitants tous les âges réunis
Valencienne	11,4	4,93
Aragonaise	17,9	5,99
Castillane supérieure	20,5	7,08
Haute-Andalousie	21,8	4,55
Catalane	24,4	7,98
Castillane inférieure	29,9	5,96
Vasco-Navarraise	33,7	6,66
Galicienne	36,1	6,34
Basse-Andalousie	36,9	6,39
Cantabrique	51,4	5,65
Espagne	*26,5*	*6,05*

Si la mortalité par le cancer augmentait avec la proportion d'éléments brachymorphes, on devrait, en supposant le phénomène de l'attraction des grandes villes complètement éliminé par le groupement régional, et toutes autres causes de perturbation écartées, trouver, dans la deuxième colonne, des taux de mortalité qui augmenteraient plus ou moins rapidement en passant de la région valencienne, où il y a un minimum d'éléments «étrangers», à la région cantabrique qui en compte un maximum. Il n'en est rien. Les taux de mortalité se suivent sans un ordre apparent.

Les taux de mortalité sur lesquels nous venons d'opérer ne sont que des taux génériques puisqu'ils se réfèrent à la population de tout âge. La mortalité par le cancer étant, par contre, presque nulle au-dessous de 40 ans, il vaut mieux calculer le taux de la morta-

lité en rapportant le nombre des décès par le cancer à la population de 40 ans et plus. Les données nécessaires à ce nouveau calcul se trouvent dans le tableau qui suit:

Mortalité par le cancer dans les différentes provinces de l'Espagne pour 10.000 habitants (40 ans et plus), pendant la période de 1919 à 1921.

Provinces avec capitales	Nombre absolu	Moyenne annuelle	Population 1910 40 ans et plus	Tauxp. 10.000 habit. de 40 ans et plus	Provinces avec capitales	Nombre absolu	Moyenne annuelle	Population 1910 40 ans et plus	Tauxp. 10.000 habit. de 40 ans et plus
Alava . . .	211	70,3	28.080	25,04	Lérida . . .	442	147,3	90.899	16,21
Albacete . .	387	129	76.355	16,89	Logroño . .	371	123,6	54.579	22,66
Alicante . .	672	224	143.349	13,63	Lugo. . . .	555	218,3	145.162	15,04
Almeria . .	491	163,7	100.984	16,21	Madrid. . .	2.803	934,3	254.160	36,76
Avila. . . .	411	137	58.330	23,49	Malaga. . .	955	318,3	167.251	21,62
Badajoz . .	766	255,3	173.173	14,74	Murcie . . .	840	280	160.350	17,46
Baléares . .	611	203,6	104.204	19,54	Navarre . .	654	182	91.221	23,90
Barcelone. .	3.675	1.225	350.111	34,99	Orense . . .	559	186,3	136.214	13,68
Biscaye . .	726	242	90.078	26,87	Oviédo . . .	1.228	409,3	184.951	22,13
Burgos . . .	853	284,3	101.851	27,91	Palencia . .	451	150,3	57.648	26,08
Cáceres. . .	574	191,3	111.989	17,08	Pontevedra .	1.213	404,3	155.198	26,05
Cadix . . .	1.113	371	130.189	28,50	Salamanque.	690	230	98.718	23,30
Canaries . .	596	198,6	106.919	18,57	Santander .	703	234,3	77.916	30,08
Castellón . .	460	153,3	99.011	15,49	Saragosse . .	1.058	352,6	132.001	26,72
Ciudad-Real.	669	223	102.479	21,76	Ségovie. . .	341	113,6	47.282	24,04
Cordoue . .	731	243,6	146.031	16,89	Séville . . .	1.244	414,5	181.077	22,90
Corogne . .	1.327	442,3	198.828	22,24	Soria. . . .	325	108,3	45.867	23,62
Cuenca . . .	393	131	87.938	14,90	Tarragone .	557	185,6	109.792	16,91
Gerona . . .	608	202,6	97.551	20,78	Teruel . . .	337	112,3	77.285	14,53
Grenade . .	792	264	144.633	18,75	Tolède . . .	676	225,3	115.638	19,49
Guadalajara.	400	133,3	62.554	21,32	Valence . .	1.442	480,6	246.489	19,50
Guipúzcoa .	534	178	61.286	29,04	Valladolid .	823	274,3	82.709	33,16
Huelva. . .	531	177	86.196	20,53	Zamora. . .	454	151,3	86.553	17,48
Huesca. . .	314	104,3	76.992	13,55					
Jaén	716	272	140.356	18,58	*Espagne* . .	*38.044*	*12.681,3*	*5.768.129*	*21,99*
Léon. . . .	662	220,6	113.683	19,41					

N.B. — Les taux de mortalité ont été calculés sur le nombre de décès par le cancer pour tous les âges (1919–1921) mais par rapport à la population âgée de 40 ans et plus (1910). La proportion des décès par le cancer chez la population âgée de 40 ans et plus pendant la période de 1908 à 1920 était de 9,0%.

En groupant, d'après ce tableau, les provinces en régions, et en calculant, d'après le nombre total des décès de chaque région, le taux de mortalité, on peut comparer ces nouveaux taux aux pourcentages croissants de brachymorphes, et l'on arrive aux chiffres ci-dessous:

Régions espagnoles par ordre croissant d'éléments brachymorphes	Mortalité par le cancer par 10.000 habitants (40 ans et plus) (1919-1921)	Régions espagnoles par ordre croissant d'éléments brachymorphes	Mortalité par le cancer par 10.000 habitants (40 ans et plus) (1919-1921)
Valencienne.	17,55	Vasco-Navarraise	26,17
Aragonaise	20,54	Galicienne	21,07
Castillane supérieure	24,03	Basse-Andalousie	23,51
Haute-Andalousie	17,52	Cantabrique.	21,12
Catalane	27,15	*Espagne*	*21,99*
Castillane inférieure	22,66		

Il est facile de constater, ici encore, que la mortalité par le cancer ne semble pas augmenter de manière très nette en passant des zones où les brachymorphes sont absents, ou presque, à celles où ils se trouvent en quantité relativement nombreux. Cependant, ici la deuxième moitié de la série de la mortalité présente, dans son ensemble, des taux plus élevés que ceux de la première moitié.

On peut aussi se demander si les dix taux de mortalité qui se suivent, selon l'ordre de brachycéphalie croissante, et tels qu'ils sont présentés dans l'un des tableaux précédents, après avoir été interpolés par une ligne droite, indiquent, grâce à cette ligne, un mouvement profond d'ascension, ou de descente, ou parallèle à la ligne des abscisses. C'est le calcul que nous avons déjà fait pour les taux des seize régions italiennes (vers la fin du paragraphe III de la deuxième partie. Voir aussi note concernant ce calcul).

La série formant la succession des dix régions pour la mortalité par le cancer, de tout âge (pour 100.000 habitants, taux arrondis: 49, 60, 71, 46, 80, 60, 67, 63, 64, 57), a, comme équation d'une ligne droite:

$$y = 61{,}7 + 0{,}62\,x.$$

Et la série concernant la mortalité par le cancer pour la population âgée de 40 ans et plus, a, comme équation d'une ligne droite (pour 10.000 individus de 40 ans et plus, taux arrondis: 18, 21, 24, 18, 27, etc.):

$$y = 22{,}3 + 0{,}32\,x.$$

Il s'agit donc de lignes droites ascendantes, en raison de 0,62 pour la première, et de 0,32 pour l'autre, de lignes ascendantes, comme l'était celles que le lecteur connaît déjà pour l'Italie, indiquant que la direction profonde de la série formée par les taux de mortalité, rangés par ordre de brachymorphes croissant, est dans le sens de l'augmentation. Mais tandis que l'«erreur» du degré d'élévation pour la série italienne était bien plus petite que ce même degré d'élévation, ici l'«erreur» est presque égale au degré d'élévation ou même plus grande. En effet, pour la première ligne droite (mortalité pour tous les âges ensemble)

$$\sigma_b = \frac{\sigma_r}{\sqrt{\Sigma x^2}} = \frac{9{,}27}{\sqrt{82{,}5}} = 1{,}03 \quad .$$

d'où $\frac{0{,}62}{1{,}03} = 0{,}60$ indiquant que le degré d'élévation est presque la moitié de l'«erreur». Et pour la deuxième ligne droite (mortalité pour les classes d'âge de 40 ans et au-dessus)

$$\sigma_b = \frac{2{,}74}{\sqrt{82{,}5}} = 0{,}30, \qquad \text{d'où} \quad \frac{0{,}32}{0{,}30} = 1$$

indiquant que le degré d'élévation est égal à l'«erreur».

Il faut conclure que le nombre des termes composant nos deux séries (10 termes) est trop petit pour que la ligne droite qui résulte d'un calcul d'interpolation puisse véritablement indiquer la direction du mouvement (d'élévation ou de diminution).

De même, le calcul du coefficient de corrélation de Bravais, r, entre le pourcentage de brachymorphes que chaque région possède (11 %, 18 %, 21 %, 22 %, en chiffres arrondis), et la mortalité correspondante par le cancer (40 ans et plus), donne les valeurs suivantes:

σ_1 pour les brachymorphes 10,9; σ_2 pour la mortalité 2,9; $\Sigma\,(xy) = 79{,}80$, d'où

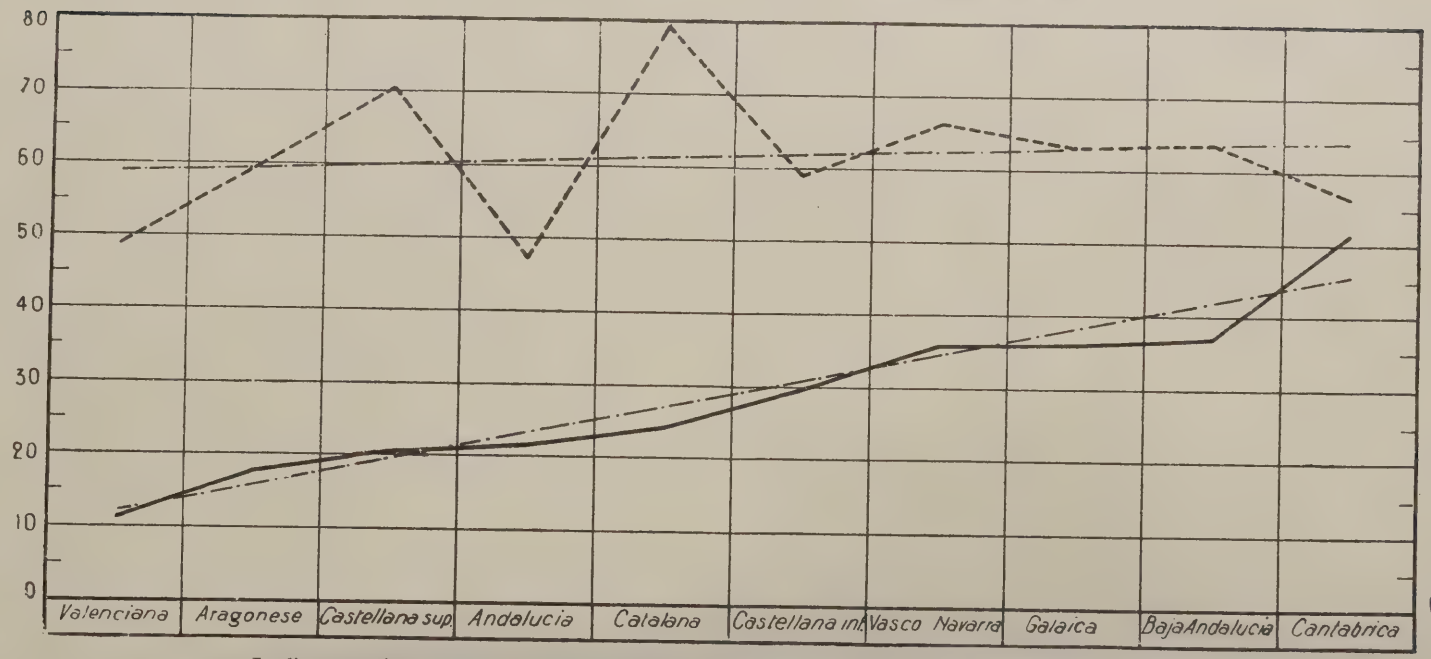
$$r = \frac{79{,}80}{316{,}1} = 0{,}25,$$

qui indiquerait une corrélation positive entre l'augmentation du pourcentage des brachymorphes et l'augmentation de la mortalité; mais l'erreur probable de ce coefficient est de 0,20, ce qui indique que le coefficient en question n'est pas significatif, puisqu'il égale, presque, son erreur probable.

Figure Nº 25.

ESPAGNE.

Mortalité par le cancer *(pour* 100.000 *habitants) dans chaque région et pourcentage des individus de* crâne brachymorphe *dans chaque région* [1].



[1] La ligne continue, dans le diagramme inférieur, indique la série brute des pourcentages de *brachymorphes* dans chaque région; la ligne pointillée représente l'interpolation de la série brute. La ligne brisée, dans le diagramme supérieur, indique la série brute de la *mortalité* par le cancer dans chaque région; la ligne pointillée représente l'interpolation de la ligne brute. Voir les équations dans le texte.

Voyons plutôt quel est le résultat que donne un examen limité aux régions extrêmes du point de vue de la race, c'est-à-dire aux régions: cantabrique, galicienne et basse-andalouse, où les éléments brachymorphes sont en plus grand nombre que partout ailleurs en Espagne; et aux régions valencienne et aragonaise, où ces éléments « étrangers » sont presque nuls, la totalité de la population étant de type dolichomorphe.

Quelques mots tout d'abord sur la composition des *provinces* qui forment ces régions, du point de vue de l'indice céphalique. Le pourcentage d'individus moins dolichocéphales ou bien franchement brachycéphales, dont nous nous sommes servis jusqu'à présent pour l'étude de ces régions, a été calculé par nous en utilisant les sériations *régionales* d'Oloriz, d'après lesquelles nous avons été obligé de couper la sériation à la limite de 80. C'est ainsi que nous avons calculé le pourcentage de 36,1 pour la région galicienne, 51,4 pour la région cantabrique, 36,9 pour la Basse-Andalousie, etc., jusqu'à 11,4 pour la région valencienne. Mais la séparation entre dolychomorphes et brachymorphes se faisant à 81,99 sur le vivant, et cette séparation pouvant se faire à 81,99 sur les éléments étudiés par Oloriz pour les *provinces*, voici les résultats de ce nouveau calcul pour les *provinces* qui nous intéressent plus particulièrement:

Pourcentage d'individus présentant un indice céphalique supérieur à 81,99 (probablement brachymorphes en majorité).

Région cantabrique :		*Région valencienne :*	
Lugo	26,43	Castellón	4,03
Oviédo	32,59	Valence	3,17
Santander	27,79	Alicante	4,54
Région galicienne :		*Région aragonaise :*	
La Corogne	14,52	Huesca	4,23
Pontevedra	13,20	Saragosse	4,55
Orense	9,34	Teruel	5,85
Région de la Basse-Andalousie :		Soria	5,18
Séville	12,24	Guadalajara	4,93
Huelva	17,65		
Malaga	15,42		
Cadix	21,14		

Il y a donc une différence sensible entre les pourcentages en brachymorphes des deux groupes de provinces extrêmes. Que devient la mortalité par le cancer de ces deux groupes ? Les trois régions où les brachymorphes sont relativement nombreux ont une mortalité de 5,65, 6,34, et 6,39 (tous les âges ensemble) et de 21,12, 21,07, 23,51 (population âgée de 40 ans et plus), tandis que la mortalité des deux régions exclusivement ou presque dolichomorphes, est de 4,93 et 5,99 respectivement (tous les âges ensemble) et de 17,55 et 20,54 (population âgée de 40 ans et plus). On pourrait voir dans ces chiffres une petite différence en faveur des zones dolichomorphes, mais il serait bien téméraire de formuler une conclusion à cet égard.

Nous pourrions aussi considérer, en un bloc, les régions les plus riches en éléments « étrangers » et comparer ce bloc au reste du territoire espagnol. Nous aurions alors le tableau suivant:

	Taux de mortalité par le cancer par 10.000 habitants	
	Tous les âges ensemble	Population de 40 ans et plus
Régions espagnoles où le pourcentage d'individus présentant un indice céphalique de 80 et plus est supérieur à 30 %:		
Cantabrique Vasco-navarraise Galicienne Basse-andalouse	6,24	22,7
Régions espagnoles où le pourcentage d'individus présentant un indice céphalique de 80 et plus est inférieur à 30 %:		
Valencienne Aragonaise Castillane supérieure Haute-andalouse Catalane Castillane inférieure	6,08	21,9

Certes, les zones où les brachycéphales sont plus nombreux ont un taux de mortalité par le cancer un peu supérieur, mais qui oserait tirer des conclusions d'une différence si minime, sans tenir compte des causes d'erreur qui peuvent se cacher dans les matériaux sur lesquels nous avons travaillé ?

Si l'on s'arrêtait seulement aux trois régions: cantabrique, galicienne, basse-andalouse (dont les pourcentages d'indice céphalique de 80 et plus sont 51,4, 36,1, 36,9, tandis que pour la région vasco-navarraise le pourcentage n'est que de 35,7), le taux de mortalité, par le cancer, de ce groupe deviendrait 6,16 (pour tous les âges ensemble) et 22,0 (pour la catégorie de 40 ans et plus).

III.

La race et le cancer au Portugal.

Les données anthropologiques utilisables pour une étude de la géographie actuelle des races au Portugal ne sont pas aussi détaillées que celles que nous possédons sur l'Espagne ou surtout sur l'Italie. Quant aux données démographiques sur la mortalité par le cancer, il y a lieu de penser que nous nous heurtons ici aussi à plusieurs difficultés.

L'indice céphalique au Portugal a été étudié par Ferraz de Macedo, et, d'après des données recueillies grâce aux anthropologues portugais, par Deniker. Ferraz de Macedo a étudié aussi l'indice nasal et l'indice facial [1]. La coloration a été étudiée par E. Tamagnini et par d'autres auteurs; la taille par Sant'Ana Marques, tandis qu'un résumé substantiel de nos connaissances sur la géographie anthropologique actuelle du Portugal a été fait par Mendes Correa [2]. Les données numériques de ces études sont suffisantes

[1] Ferraz de Macedo: « Comptes rendus du Congrès international d'anthropologie criminelle à Bruxelles », 1892; J. Deniker, *op. cit., L'indice céphalique*, etc.

[2] Au chapitre: « Etnogenia portugesa » de son livre *Raça e nacionalidade*, Porto, 1919, page 87.

pour donner une idée générale du type de la race chez la population portugaise, mais elles ne permettent pas une étude approfondie et définitive, du point de vue de la répartition régionale.

D'une manière générale, cette population est assez homogène du point de vue de la race, bien plus homogène que la population italienne et plus homogène que la population espagnole, qui l'est assez.

Il s'agit, en l'espèce, d'un type dolichomorphe accusé. Les types brachymorphes sont rares et on ne les rencontre en quelque quantité que dans les restes néolitiques de Mugem. La taille est petite, la coloration brune. C'est le type « ibero-insular » de Mendes Correa, ou méditerranéen, auquel de rares types nordiques, et même berbères, de tailles élevées (Mendes Correa) sont mélangés.

Les indices moyens provinciaux accusent tous la dolichocéphalie franche (moins de 75) ou la sous-dolichocéphalie (de 75,01 à 77,77). Là où ces moyennes sont le plus élevées, nous pouvons soupçonner l'existence de quelques types brachymorphes. Ce sont les provinces de Minho (nord) et d'Algarve (sud). Mendes Correa fait remarquer que l'influence de la brachycéphalie apparaît aussi dans les provinces de Douro et d'Alamtejo (sud-est). Au sein des populations de ces provinces, en effet, on trouverait des individus appartenant à une variété de l'*Homo alpinus* (Mendes Correa, page 94). Il faut remarquer, cependant, que cette répartition n'a qu'une valeur relative puisque le nombre des crânes ayant servi aux recherches de Ferraz de Macedo est très limité (417 crânes masculins et 485 féminins).

On pourra aussi consulter avec profit les cartes de la coloration des yeux et des cheveux de Tamagnini, celle de la taille, reproduite par Mendes Correa (dans son livre: *Homo*, Lisbonne, 1921, page 254); cet examen confirme l'existence d'une légère influence brachycéphale dans les régions susmentionnées. Il nous fait constater également, dans ces régions, une taille un peu plus élevée, et (dans le nord, à Minho) un certain nombre de colorations moins foncées.

Quant à la répartition géographique de la mortalité par le cancer au Portugal, notre premier tableau en donne les taux pour chacune des dix-sept *provinces* (de la partie continentale), calculés pour la population de tout âge. Le deuxième tableau donne les taux calculés pour la population de 40 ans et plus.

Mortalité par le cancer au Portugal (par 10.000 habitants, tous les âges réunis) 1913-1921.

Provinces	1913 à 1921		Population 1917	Taux moyen annuel par 10.000 habitants
	Total	Moyenne		
Aveiro	805	89,4	341.163	2,62
Beja	336	37,3	197.532	1,89
Braga	361	40,1	378.471	1,06
Bragance	140	15,5	178.555	0,87
Castelo-Branco	172	19,1	239.933	0,80
Coïmbra	562	62,4	355.502	1,76
Evora	406	45,1	151.361	2,88
Faro	447	49,7	270.029	1,84
Guarda	185	20,6	262.081	0,79
Leiria	329	36,6	272.859	1,34

Mortalité par le cancer au Portugal (par 10.000 habitants, tous les âges réunis) 1913-1921 (suite).

Provinces	1913 à 1921		Population 1917	Taux moyen annuel par 10.000 habitants
	Total	Moyenne		
Lisbonne-ville	3.796	421,2	466.992	9,02
» communes	1.263	140,3	435.722	3,22
Portalegre	312	34,7	145.150	2,39
Porto-ville	1.290	143,3	199.640	7,18
» communes	969	107,7	493.930	2,18
Santarem	628	69,8	329.643	2,12
Viana do Castelo	394	43,8	226.604	1,93
Vila-Rial	128	14,2	239.317	0,59
Viseu	310	34,4	409.378	0,84
Partie continentale	*12.833*	*1.425,9*	*5.593.762*	*2,55*
Açores				
Angra do H.	265	29,4	68.283	4,31
Horta (8 années)	84	10,5	47.856	2,19
Ponta-Delgada	436	48,4	119.881	4,01
Madère	774	86	175.500	4,90
Partie insulaire [1]	*1.559* [1]	*173,2* [1]	*411.520*	*4,21*
Portugal [1]	*14.392* [1]	*1.599,1* [1]	*6.005.282*	*2,66*

Mortalité par le cancer au Portugal (1915-1919).
(Population âgée de 40 ans et plus).

	Population âgée de 40 ans et plus (1917)	Nombre moyen annuel des décès (1915-1919)	Taux de mortalité pour 100.000 habitants
Aveiro	97.656	84,–	86,2
Beja	51.218	28,4	55,5
Braga	105.752	31,6	29,9
Bragance	53.406	12,8	18,9
Castelo-Branco	66.994	12,6	18,8
Coïmbra	107.287	55,4	51,6
Evora	40.603	39,2	96,6
Faro	72.654	41,4	57,0
Guarda	75.691	18,6	24,4
Leiria	76.800	34,4	44,8
Lisbonne	248.001	490,0	197,6
Portalègre	39.624	34,–	85,8
Porto	174.352	234,–	134,2
Santarem	92.775	62,–	66,8
Viana do Castelo	71.239	38,8	53,6
Vila-Rial	67.276	14,2	21,1
Viseu	120.933	25,6	21,2
Partie continentale	*1.462.261*	*1.249,0*	*85,4*

[1] Horta (Açores) 1921 non compris.

On voit que les taux de mortalité par le cancer sont très bas: 2,55 pour 10.000 habitants de tout âge et 8,54 pour 10.000 habitants âgés de 40 ans et plus (contre 7,1 et 20,0 respectivement en Italie, et 6,1 et 22,0 respectivement en Espagne), et l'on a tout de suite l'impression que ces taux sont trop bas. On voit en même temps que les grandes villes et les grands centres d'attraction de la population et des malades ont des taux assez élevés de mortalité par le cancer: c'est le cas de Porto et de Lisbonne, ce qui fait comprendre encore une fois le rôle que jouent l'attraction des grandes villes et les moyens cliniques et de diagnostics qui s'y trouvent, dans la répartition statistique de la mortalité cancéreuse.

Mais il faut ajouter que, dans une bonne partie des provinces du Portugal, le nombre des décès qui sont enregistrés comme dus à des causes inconnues ou mal définies est très élevé, et ce nombre est plus élevé là où les décès enregistrés comme dus au cancer sont très bas. Ainsi, dans les provinces de Guarda, de Bragance, de Viseu, de Vila-Rial, de Castelo-Branco où la mortalité par cancer est de 2,4, 1,9, 2,1, 2,1, 1,9 (pour 10.000 habitants âgés de 40 ans et plus) la mortalité respective par cause inconnue ou mal définie a été (en 1915-1919) de 281, 332, 262, 325, 345 (id., id.). Par contre, à Lisbonne-ville ce chiffre tombe à 45.

Dans ces conditions, il n'est guère possible d'établir des comparaisons, même approximatives, entre la répartition de la race et celle du cancer. Toutefois, voici le tableau qui résulte d'un rapprochement entre la répartition *régionale* de l'indice céphalique et celle du cancer. Dans ce tableau, les données démographiques des deux tableaux précédents, qui sont répartis en provinces, sont groupées autant que possible par régions, selon la répartition *régionale* sous laquelle sont présentées les données anthropologiques: *Minho* (Braga, Porto, Viana), *Traz-os-Montes* (Bragance, Vila-Rial), *Beira* (Aveiro, Castelo-Branco, Coïmbra, Guarda, Viseu), *Estremadure* (Leiria, Lisbonne, Santarem), *Alemtejo* (Beja, Evora, Portalegre), *Algarve* (Faro).

PORTUGAL.

Provinces	Indice céphalique (sur le crâne)		1913-1921 Mortalité par le cancer pour 10.000 habitants de	
	Hommes	Femmes	Tout âge	40 ans et plus
Minho	75,7	77,1	2,60	11,80
Traz-os-Montes	72,5	73,–	0,70	2,24
Douro	73,8	74,9	—	—
Beira Alta	72,6	74,2	1,49	4,19
Beira Baixa	73,7	76,–		
Estremadure	74,3	75,6	4,44	14,–
Alemtejo	74,8	76,6	2,37	7,73
Algarve	75,3	76,3	1,84	5,64
Portugal	*74,5*	—	*2,56*	*8,54*

Quatrième chapitre

Par le professeur Alfredo NICEFORO.

LA RACE ET LE CANCER EN BELGIQUE ET EN HOLLANDE

1.

RÉPARTITION GÉOGRAPHIQUE DE LA RACE EN BELGIQUE.

Ce sont surtout les travaux de Houzé qui nous renseignent sur la répartition géographique des races en Belgique [1]. D'après ces travaux, notamment d'après le mémoire sur l'indice céphalique, on constate:

1. Que sept des neuf provinces du royaume ont des *indices céphaliques moyens* inférieurs à 82 (sur le vivant). Deux provinces seulement accusent des indices céphaliques de 82 et plus. La Belgique est donc, en bonne partie, un pays de dolichomorphes.

2. Que les deux provinces où les brachymorphes sont le plus nombreux sont le Brabant (avec Bruxelles) et le Luxembourg; la première a un indice moyen de 82,34 et la deuxième de 83,38.

3. Qu'en général, les quatre provinces du nord de la Belgique: Flandre-Occidentale (Ostende), Flandre-Orientale (Gand), Anvers (Anvers), Limbourg (Hasselt) sont peuplées par une grande majorité de dolichomorphes, tandis que les quatre provinces du Midi, Hainaut (Charleroi), Namur (Namur), Liége (Liége), Luxembourg (Arlon) tout en étant relativement dolichomorphes, présentent une certaine proportion de brachymorphes.

Répartition géographique de quelques caractères anthropologiques en Belgique.

Provinces	Indice céphalique (sur le vivant)	Taille moyenne
1. Anvers	79,38	1 m. 663
2. Brabant	82,34	1 m. 657
3. Flandre-Occidentale	80,52	1 m. 656
4. Flandre-Orientale	80,11	1 m. 656
5. Hainaut	81,36	1 m. 654
6. Liége	81,13	1 m. 658
7. Limbourg	78,91	1 m. 671
8. Luxembourg	83,38	1 m. 658
9. Namur	80,72	1 m. 662

[1] E. HOUZÉ, « Bulletin de la Société d'anthropologie de Bruxelles », 1887 et 1888.

LISTE DES PROVINCES DE BELGIQUE

arrangées selon la numérotation employée sur les cartogrammes.

1. Anvers
2. Brabant
3. Flandre-Occidentale
4. Flandre-Orientale
5. Hainaut
6. Liége
7. Limbourg
8. Luxembourg
9. Namur

Figure N° 26.

BELGIQUE.

Répartition géographique de l'indice céphalique.

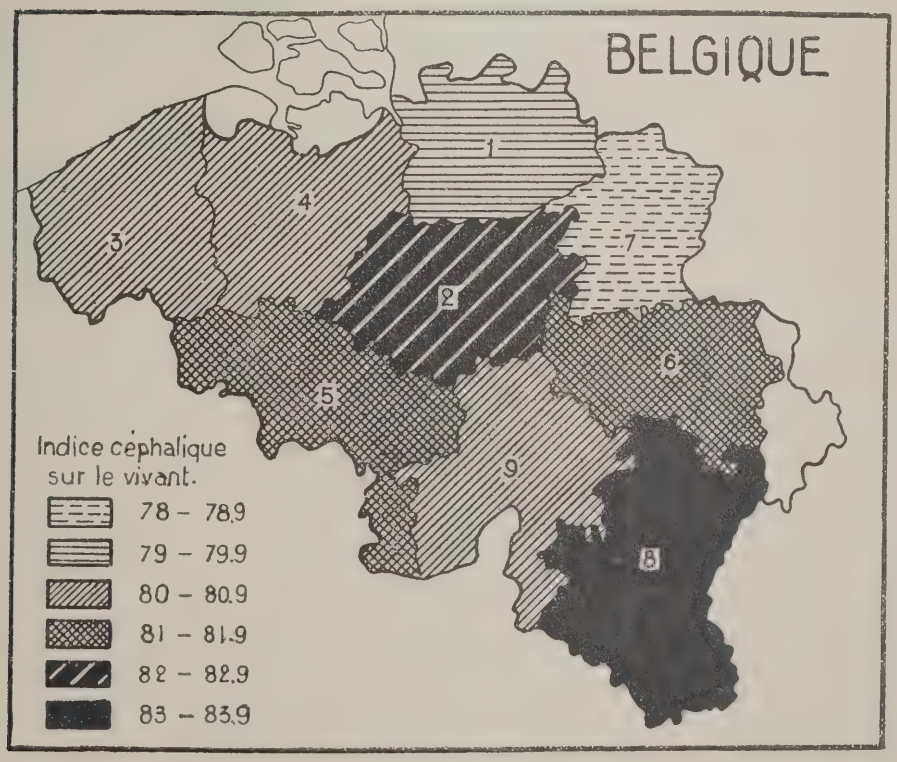
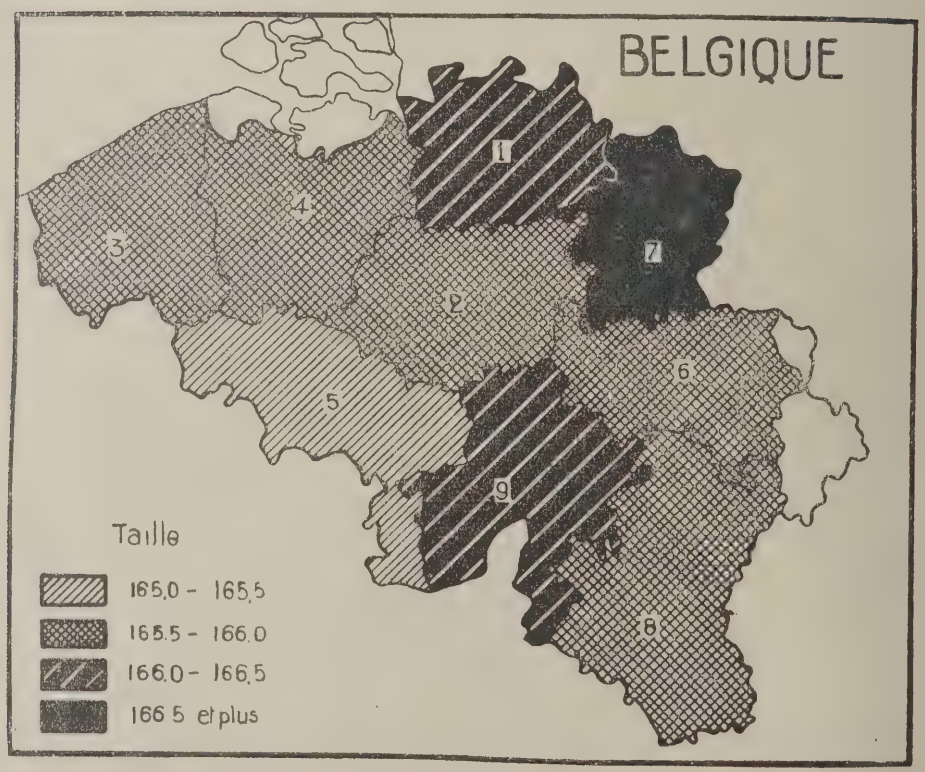


Figure N° 27.

BELGIQUE.

Répartition géographique de la taille.



La province du Brabant (Bruxelles) se rattache, dans sa partie septentrionale, aux dolichomorphes du nord, et, dans sa partie méridionale, aux brachymorphes du midi.

Des travaux et observations de Houzé, il ressort également:

4. Que la *taille* des populations des provinces dolichomorphes est, en général, plus élevée que celle des populations moins dolichomorphes et que la *coloration* blonde ou claire est bien plus fréquente chez les premières que chez les secondes. Quant à la relation existant entre la répartition de la taille et celle de l'indice céphalique, l'on peut voir, grâce à un calcul très simple, que les trois provinces de notre tableau où l'indice céphalique est le plus bas (Limbourg, Anvers, Flandre-Orientale) ont une moyenne des tailles moyennes de 166,3; que les trois provinces qui suivent, par ordre d'indice céphalique croissant (Flandre-Occidentale, Namur, Liége) ont une moyenne des tailles moyennes de 165,9,

et que trois provinces, enfin, où l'indice céphalique est le plus élevé (Hainaut, Brabant, Luxembourg), ont une moyenne des tailles moyennes de 165,6. Il apparaîtrait donc que la taille diminue en passant des dolichomorphes (blonds) aux brachymorphes, si toutefois le calcul très grossier que nous venons de faire peut mener à des conclusions dignes de foi. L'indice des rangs, en ce qui concerne les deux séries, donne une valeur de —0,48, indiquant que, à l'ordre croissant des indices céphaliques correspond, à peu près, l'ordre décroissant des tailles.

Les cartogrammes que nous publions aideront le lecteur à mieux comprendre cette description de la répartition des races en Belgique.

En somme, la Belgique serait peuplée, surtout dans le nord, par des représentants de l'*Homo europaeus*, dolichoblond et aurait un certain nombre de représentants de l'*Homo alpinus* dans le midi.

Ces indications ne constituent que les lignes très générales de la répartition des races en Belgique. Houzé lui-même et ses savants collègues belges ont mis en relief des faits particuliers qu'il ne faut pas ignorer: des individus de type brachymorphe peuplaient déjà la Belgique à l'époque néolithique (J. Fraipont et Houzé); cette pénétration des brachymorphes néolithiques se serait faite par les pays qui sont actuellement la Suisse et la France; si l'on rapproche la géographie des races de celle des langues, en Belgique, on trouve que la zone flamande (nord) est plus dolichomorphe que la zone wallonne (midi); on trouve aussi que les provinces les plus dolichoblondes sont le Limbourg, Anvers et la partie septentrionale du Brabant; et que, si le nord de la Belgique, dans ses deux provinces des Flandres, est un peu moins dolichomorphe que les autres provinces du nord, c'est à cause de la fusion des populations des Flandres avec l'élément brachymorphe (celtique) du sud. Les Wallons du midi, parmi lesquels se trouvent les brachymorphes, sont moins brachymorphes dans les régions de Liége et du Hainaut que les envahisseurs «germaniques» dolichoblonds ont toujours traversées pour se répandre dans le midi (Houzé). On a voulu faire observer en même temps que, si les brachymorphes belges sont de taille plus élevée que les brachymorphes français, auxquels ils se rattachent, c'est parce que la haute taille des dolichoblonds a fait sentir sur eux son influence. Ces détails devraient attirer encore une fois l'attention des chercheurs. Plusieurs de ces problèmes devraient faire l'objet de nouvelles études.

II.

Race et mortalité par le cancer en Belgique.

L'étude de la répartition géographique de la mortalité par le cancer en Belgique se heurte ici encore à la grave difficulté que provoque l'enregistrement des décès au lieu du décès et non au lieu du domicile habituel du défunt. On comprend aisément que des grands centres, comme Bruxelles, Liége et Anvers, attirent un grand nombre de malades, tandis que les provinces moins bien partagées au point de vue des établissements hospitaliers accusent un moins grand nombre de décès par le cancer. Il faut ajouter qu'il y a, ici aussi, une certaine différence entre les provinces, du point de vue du nombre de décès inscrits sous la rubrique « maladies inconnues ou mal définies ». Dans la province d'Anvers, par exemple, il n'y en a que 2,6 pour 100 décès, tandis que dans celle du Luxembourg ce pourcentage s'élève à 5%. Dans cette même province (Luxembourg) qui a un taux minimum de mortalité par le cancer, on trouve le taux le plus élevé de mortalité par sénilité (105 pour 10.000 habitants; décès et habitants âgés de 40 ans et plus) et l'on sait que sous la rubrique « sénilité », il peut se cacher un certain nombre de décès par cancer.

Voici deux tableaux indiquant la répartition géographique de la mortalité par le cancer en Belgique et se référant, l'un, à la population âgée de 21 ans et plus, et l'autre à celle de 40 ans et plus

Mortalité par le cancer dans les provinces de la Belgique au cours de la période 1919 à 1922.

Provinces	Habitants âgés de 21 ans et plus (31 déc. 1920)	Nombre de décès par cancer		
		1919-1922	Moyenne 1919-1922	Taux p. 10.000 habitants (21 ans et plus)
1. Anvers	603.789	3.187	797	13,2
2. Brabant	1.001.812	5.167	1.292	12,9
3. Flandre-Occidentale	475.012	2.321	580	12,2
4. Flandre-Orientale	670.865	3.175	794	11,8
5. Hainaut	822.642	3.547	887	10,8
6. Liége	588.131	2.941	720	12,2
7. Limbourg	160.055	574	143	8,9
8. Luxembourg	138.657	515	129	9,3
9. Namur	228.910	1.040	260	11,4
Royaume	*4.689.873*	*22.467*	*5.617*	*12,0*

Mortalité par le cancer en Belgique au cours de la période 1919 à 1922.

Provinces	Population âgée de 40 ans et plus 1910	Taux pour 10.000 hab. âgés de 40 ans et plus 1910
Anvers	241.923	32,98
Brabant	419.167	30,82
Flandre-Occidentale	244.436	23,72
Flandre-Orientale	318.440	24,94
Hainaut	390.658	22,71
Liége	271.588	26,51
Limbourg	72.300	19,78
Luxembourg	72.768	17,73
Namur	122.037	21,31
Royaume	*2.153.317*	*26,09*

Il n'est pas aisé de comparer, *sic et simpliciter*, la carte du cancer à celle de la races entre autres à cause de la difficulté qu'il y a à constituer des groupement territoriaux de telle sorte qu'ils fassent disparaître, ou qu'ils atténuent l'attraction des grands centres, hospitaliers, les plus importants de ceux-ci pouvant attirer les malades d'une province autre que celle où ils se trouvent.

Figure N° 28.

BELGIQUE.

Répartition géographique de la mortalité par le cancer pour 100.000 individus de tout âge, période 1920-1922.

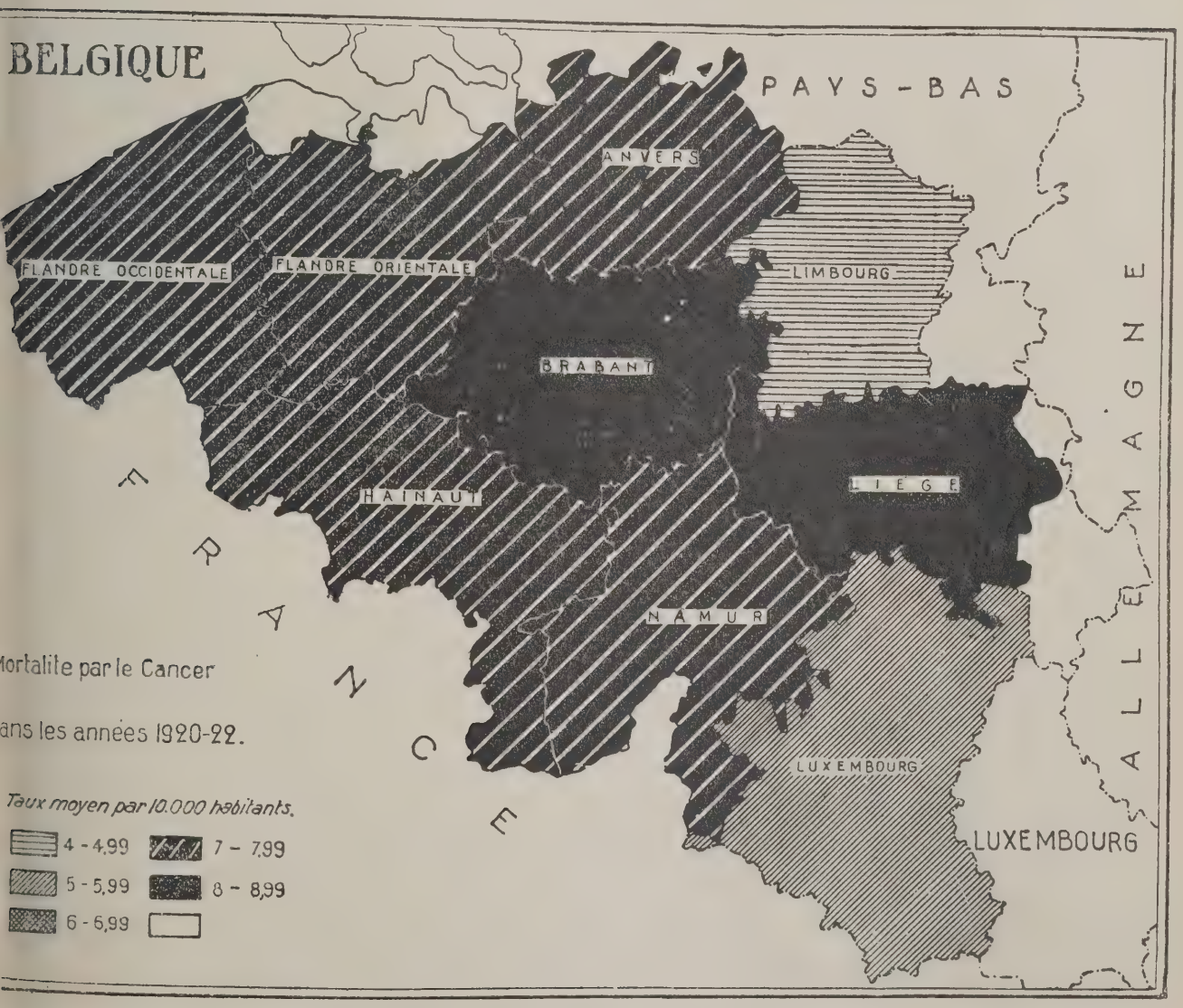
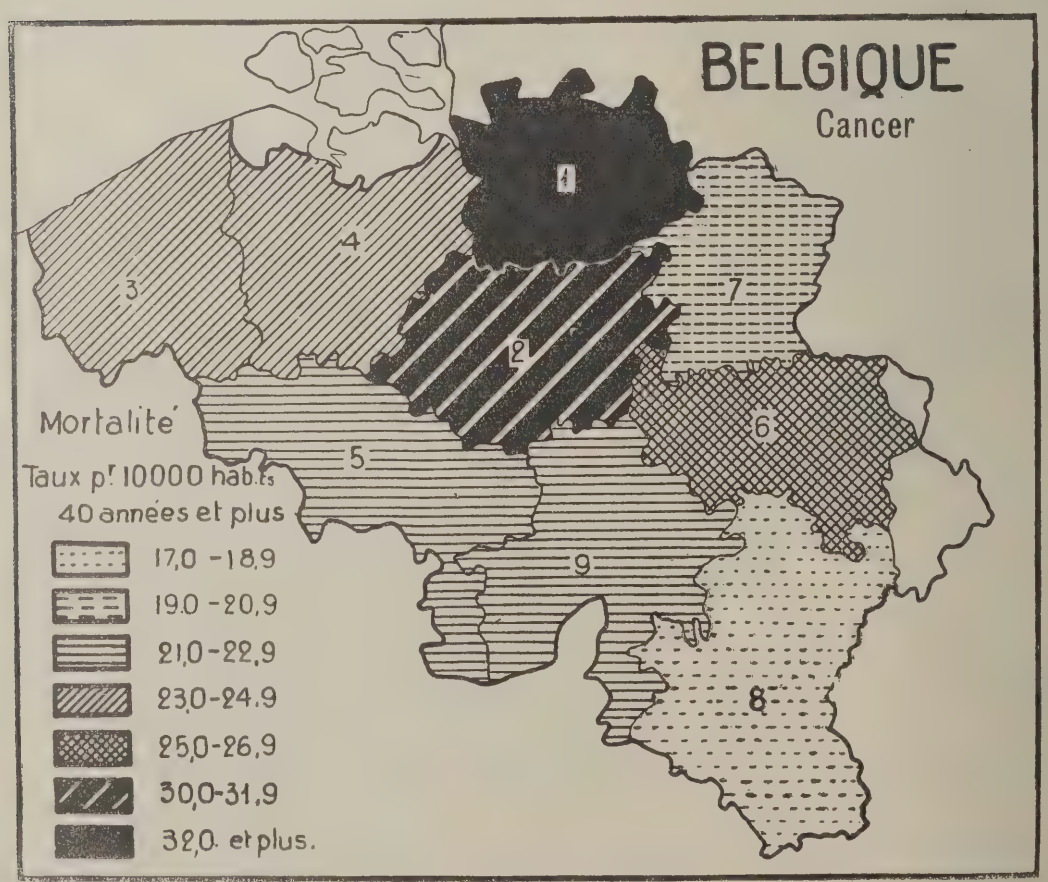


Figure N° 29.

BELGIQUE.

Répartition géographique de la mortalité par le cancer, parmi la population âgée de 40 ans et plus, période 1919-1922.

1. Anvers
2. Brabant
3. Flandre-Occidentale
4. Flandre-Orientale
5. Hainaut
6. Liége
7. Limbourg
8. Luxembourg
9. Namur



Quoi qu'il en soit, en consultant les deux tableaux, on trouve:

1. Que le rang occupé par les neuf provinces belges d'après le taux croissant de mortalité, calculé sur la population de 21 ans et plus, est presque le même que si on les range d'après la mortalité, calculée sur la population de 40 ans et plus. L'indice des rangs, pour ces deux séries, est de 0,94.

2. Le classement des neuf provinces, d'après leur indice céphalique croissant, et celui de ces mêmes provinces d'après leur taux de mortalité (population âgée de 40 ans et plus) donne un indice des rangs de — 0,15. Le signe de l'indice est négatif, ce qui ferait soupçonner l'existence d'un rapport inverse (l'indice céphalique augmente et la mortalité diminue), mais la valeur de l'indice est trop faible pour qu'on en puisse tirer des conclusions.

Nous pourrions suivre aussi, pour former des groupements plus larges, une autre méthode. Nous pourrions placer d'un côté les quatre provinces les plus dolichomorphes (Limbourg, Anvers, les deux Flandres), et de l'autre les quatre provinces les moins dolichomorphes (Hainaut, Namur, Liége, Luxembourg), en laissant de côté le Brabant, qui est partagé entre dolichomorphes et brachymorphes, mais nous ne serions pas certains pourtant d'avoir ainsi éliminé l'influence de l'attraction des centres et certaines autres causes d'erreurs. En constituant ces deux blocs et en calculant pour chacun d'eux le rapport existant entre le nombre moyen des décès par le cancer de chaque bloc et la population totale (de 21 ans et plus, ou de 40 ans et plus) de chaque bloc, nous obtiendrons le résultat suivant:

Provinces	Population (21 ans et plus)	Décès	Taux de mortalité (par 10.000 habitants)
Les quatre provinces les plus dolichomorphes . . .	1.909.721	2.315	12,1
Les quatre provinces les moins dolichomorphes . . .	1.778.340	1.996	11,2
	Population (40 ans et plus)		
Les quatre provinces les plus dolichomorphes . . .	877.099	2.315	26,4
Les quatre provinces les moins dolichomorphes . . .	857.051	1.996	23,3

Ce résultat nous laisse toujours de l'incertitude, bien qu'il y ait probablement lieu de conclure à une plus grande mortalité, par le cancer, des dolichoblonds que des brachymorphes.

III.

Répartition géographique de la race en Hollande.

La documentation n'est pas rare; cependant on ne pourrait pas dire qu'elle soit complète, ni dans ses détails, bien approfondie. Les travaux les plus importants sont les mémoires de A. Sasse, du Dr De Man, de L. Bolk, sur l'indice céphalique, sur la pigmentation et sur la taille et les deux monographies de Deniker, l'une sur l'indice céphalique (1899) et l'autre sur la taille (1908) en Europe [1].

Si l'on se contente d'esquisser dans ses grandes lignes la répartition géographique des races en Hollande, on trouvera que la Hollande, bien que peuplée en grande majorité par des dolichoblonds, de grande taille, représentants du type *Homo europaeus*, contient dans ses provinces, surtout dans les zones du midi (Zélande, Brabant Septentrional, Limbourg), un certain nombre d'individus du type brachymorphe, bruns, de pigmentation moins claire que le reste de la population, et de taille moins élevée. Ils seraient les représentants du type *Homo alpinus*, qui existait déjà sur le sol hollandais à l'époque

[1] Voir la bibliographie dans le mémoire de J. Deniker sur l'indice céphalique en Europe et à la fin du volume de E. Pittard, déjà cité, sur *Les races et l'histoire*.

préhistorique. Des brachycéphales blonds (*H. orientalis* de Deniker?) se trouveraient, d'autre part, dans les régions du nord-est de la Hollande: dans la Drenthe, dans l'Overyssel et à Groningue.

Cette esquisse est bien vague et bien imprécise, même pour un aperçu très général, et la documentation qui serait nécessaire pour le préciser est encore fragmentaire.

Voici d'abord les tableaux numériques et les cartogrammes que nous venons de composer à ce sujet. Les onze provinces de la Hollande sont disposées, dans notre premier tableau, par ordre géographique, approximativement du nord au sud; la première colonne contient les indices céphaliques moyens de chaque province, tels qu'on les trouve dans le mémoire de Bolk; la deuxième, la taille moyenne; la troisième, le pourcentage d'individus (adolescents) aux yeux bleus et aux cheveux clairs; la quatrième, le pourcentage des types bruns (adultes); la dernière, le pourcentage d'enfants aux cheveux noirs et aux yeux foncés.

Répartition géographique de quelques caractères anthropologiques en Hollande.

Provinces	Indice céphalique	Taille	Pourcentage de	
			Blonds aux yeux clairs (adolescents)	Noirs aux yeux bruns (adolescents)
Frise	80,4	171,4	43,2	1,7
Groningue . . .	81,2	169,8	41,3	1,4
Drenthe	81,0	167,4	39,4	1,3
Overyssel . . .	81,4	168,7	35,5	1,6
Hollande-Septent.	80,5	170,7	31,2	1,8
Gueldre	80,4	169,2	34,4	2,8
Utrecht	80,5	169,6	30,1	2,4
Hollande-Mérid.	79,6	169,3	31,4	2,5
Zélande	80,8	167,9	28,4	4,1
Brabant-Septent.	81,5	167,1	22,3	4,0
Limbourg . . .	80,6	167,3	21,8	4,7

Un premier examen de ce tableau indique que la Hollande est essentiellement un pays de dolichoblonds de grande taille; toutefois, dans quelques zones du midi, il y a quelques éléments dolichomorphes de coloration foncée. Il est difficile d'aboutir à des conclusions moins vagues, étant donné les éléments numériques que nous possédons, jusqu'à ce jour.

LISTE DES PROVINCES DES PAYS-BAS

arrangées selon l'ordre de numérotation employé sur les cartogrammes.

1. Frise
2. Groningue
3. Drenthe
4. Overyssel
5. Hollande-Septentrionale
6. Gueldre
7. Hollande-Méridionale
8. Zélande
9. Brabant-Septentrional
10. Utrecht
11. Limbourg

Figure N° 30.

PAYS-BAS.

Répartition géographique de l'indice céphalique.

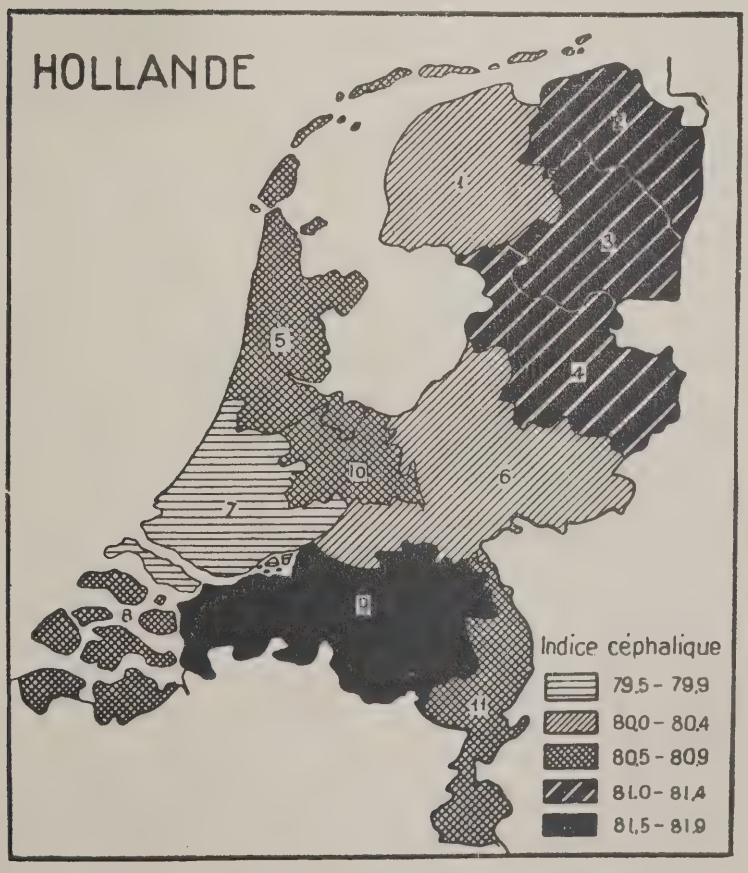


Figure N° 31.

PAYS-BAS.

Répartition géographique de la taille.

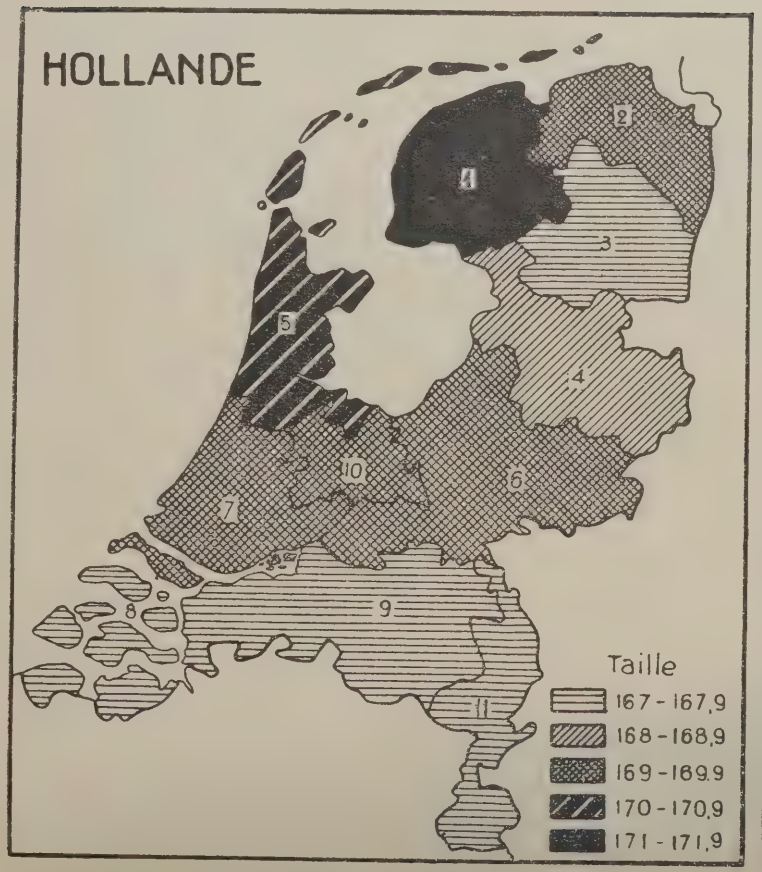
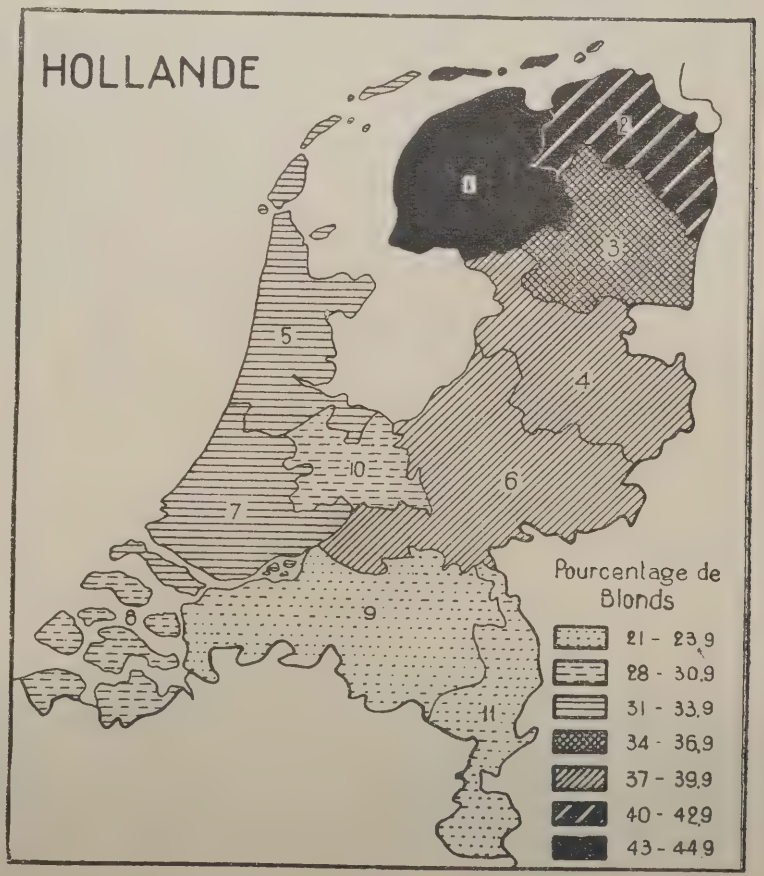


Figure N° 32.

PAYS-BAS.

Répartition géographique de la proportion des individus à cheveux blonds.



IV.

Race et mortalité par le cancer en Hollande.

Quant à la répartition géographique de la mortalité par le cancer, en Hollande, elle est telle que l'indiquent notre tableau numérique et nos figures 33 et 34 (pages 104 et 105).

Répartition géographique de la mortalité par le cancer aux Pays-Bas par sexe, chez la population de 40 ans et au-dessus, pour la période de 1919 à 1921.

Provinces	Hommes				Femmes			
	Total des décès pour la période 1919–1921	Moyenne annuelle des décès pour la période 1919–1921	Population de 40 ans et plus 31 déc. 1920	Taux moyen annuel pr 10.000 habitants période 1919–1921	Total des décès pour la période 1919–1921	Moyenne annuelle des décès pour la période 1919–1921	Population de 40 ans et plus 31 déc. 1920	Taux moyen annuel pr 10.000 habitants période 1919–1921
Frise	764	254,6	58.864	43.26	733	247,6	60.371	41,02
Groningue . .	641	213,6	50.432	42,37	633	211	54.144	38,97
Drenthe . . .	309	103	27.344	37,67	302	100,6	24.970	40,32
Overyssel . .	672	224	60.946	36,75	684	228	59.472	38,34
Hollande-Septentrionale .	2.248	749,3	177.281	42,27	2.338	779,3	198.391	39,28
Gueldre . . .	1.139	379,6	104.453	36,35	1.244	413	104.916	39,36
Hollande-Méridionale . .	2.253	751	212.193	35,39	2.672	890,6	238.812	37,30
Zélande . . .	426	142	35.961	39,49	404	134,6	37.322	36,08
Brabant-Septentrional .	1.080	362,6	100.004	36,27	1.127	375,61	101.189	37,12
Utrecht . . .	526	175,3	45.690	38,37	602	200,6	50.429	39,79
Limbourg . .	474	158	54.681	28,89	487	162,3	53.840	30,15
Pays-Bas	*10.540*	*3.387,3*	*927.849*	*36.51*	*11.226*	*3.745*	*983.856*	*38,06*

Provinces	Les deux sexes réunis	
	Population de 40 ans et plus 31 décembre 1920	Taux moyen annuel pour 10.000 habitants pr période 1919–1921
Frise	119.235	41,85
Groningue	104.576	40,60
Drenthe	52.314	38,93
Overyssel	120.418	37,54
Hollande-Septentrionale . .	375.672	40,69
Gueldre	209.369	37,94
Hollande-Méridionale . . .	451.005	36,40
Zélande	73.283	37,75
Brabant-Septentrional . . .	201.193	36,70
Utrecht	96.119	39,12
Limbourg	108.521	29,52
Pays-Bas	*1.911.705*	*37,95*

Figure N° 33.

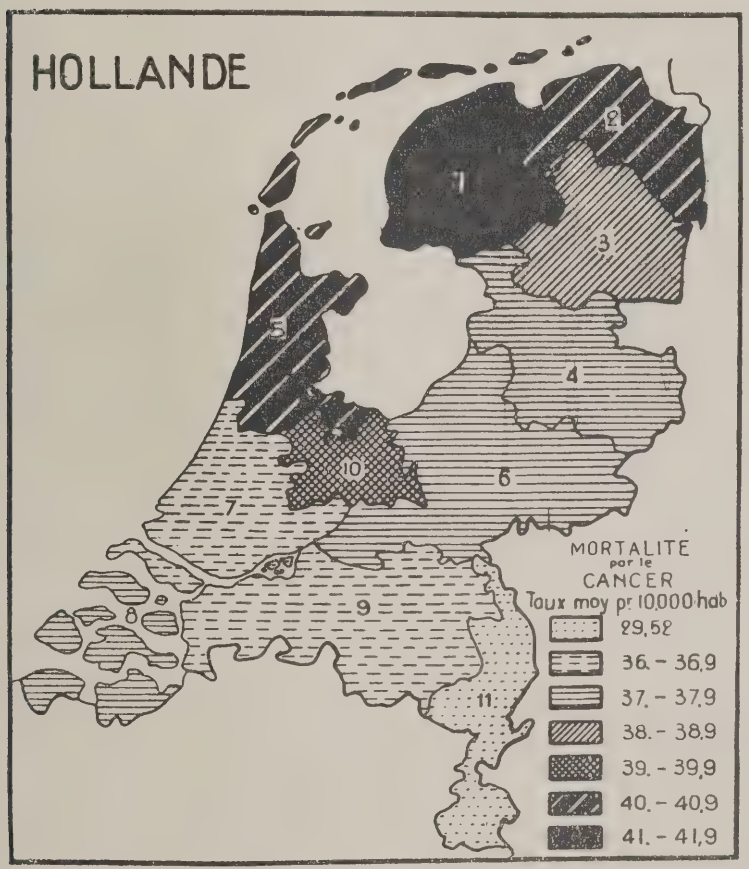
PAYS-BAS.

Répartition géographique de la mortalité par le cancer. Taux pour 100.000 individus, période 1920-1922.

Figure N° 34.

PAYS-BAS.

Répartition géographique de la mortalité par le cancer chez la population âgée de 40 ans et plus, période 1919-1921.



Si nos chiffres représentent la vraie répartition de la mortalité par le cancer dans les onze provinces hollandaises, c'est-à-dire que, si les taux ne sont pas faussés par l'influence que pourrait avoir la répartition des décès par sénilité et par cause inconnue ou mal définie, nous pourrions nous efforcer de rapprocher la répartition de la mortalité de ce que nous savons des races habitant la Hollande. Si l'on classe par ordre d'indice céphalique croissant les onze provinces hollandaises et si l'on inscrit à côté de chaque province le taux de sa mortalité par le cancer, on ne trouve pas de règle dans l'ordre selon lequel les taux de mortalité se suivent. La moyenne des trois premiers taux (correspondant aux trois provinces où l'indice céphalique est le plus bas) est de 38,73; puis, les moyennes des taux successifs, de trois en trois (à l'exception du dernier groupe qui est formé de deux provinces au lieu de trois), sont: 36, 44; 39,09; 37,12. Si donc l'indice céphalique, s'élève, le taux de mortalité n'accuse aucun mouvement, soit d'élévation, soit de diminution, qui soit bien défini. Au lieu de calculer la moyenne des taux, l'on peut calculer

les moyennes pondérées; on aura alors, 37,68 pour la mortalité des trois provinces à indice céphalique le plus bas (dolichomorphes) et puis, 38,32; 39,36; 36,72. La mortalité paraît s'élever en passant vers les brachymorphes, mais, tout à coup, elle retombe brusquement. D'autre part, si l'on classe par ordre de pourcentage croissant de blonds les onze provinces hollandaises et si l'on inscrit à côté de chaque province le taux de sa mortalité par le cancer, on trouve que cette mortalité s'élève en passant vers les provinces où le pourcentage des blonds est le plus élevé: les *moyennes successives* de taux de mortalité sont, en effet 34,66; 38,76; 38,14; 41,23. En calculant à l'aide de moyennes pondérées, ces taux de mortalité deviennent: 38,44; 38,42; 37,92; 41,46.

En répétant le calcul pour la série des enfants de type noir-brun (les provinces étant placées par ordre de pourcentages croissants de ce type), on trouverait les moyennes successives suivantes pour la mortalité: 39,02; 40,55; 37,01; 33,63, la première moyenne se référant aux provinces qui ont un minimum de sujet de type brun et la dernière aux provinces qui en ont un maximum.

Mais les indications anthropologiques relatives à la répartition de l'indice céphalique, etc., réunies dans notre tableau, sont-elles suffisantes pour donner véritablement la répartition régionale de la race dans toutes ses nuances ? Et les précisions dans le diagnostic, ou les possibilités d'un diagnostic exact, sont-elles égales dans toutes les provinces du pays ?

Le nombre d'éléments (provinces) que notre tableau fournit est trop bas pour justifier un calcul des corrélations à l'aide du coefficient r de Bravais; néanmoins, voici le résultat que donne ce calcul:

Indice céphalique (onze données de la première colonne du tableau) et mortalité par le cancer (Frise 41,9; Groningue 40,6; Drenthe 38,9, etc.), $r = + 0{,}05 \pm 0{,}20$; c'est-à-dire résultat insignifiant.

Pourcentage des enfants du type noir-brun et mortalité par cancer, $r = - 0{,}76 \pm 0{,}09$; c'est-à-dire, résultat significatif, indiquant une corrélation inverse entre la mortalité par le cancer et le type brun (ce type est-il, en Hollande, le type *Homo alpinus*, ou le *Homo mediterraneus*, ou les deux ensemble?). Il y aurait aussi une autre recherche à faire. Les descriptions qu'ont faites quelques anthropologistes hollandais, de la répartition des races en Hollande, s'accordent pour montrer dans la Zélande, dans le Brabant et dans le Limbourg, la fréquence d'un type brachycéphale brun *(Homo alpinus)*; dans la Frise, dans la Hollande-Septentrionale et Méridionale, dans la Gueldre et à Utrecht la prédominance du dolichocépale blond *(Homo nordicus)*, et dans les trois provinces de Groningue, de la Drenthe et de l'Overyssel, la fréquence de blonds moins dolichocéphales appartenant probablement au type de l'*Homo orientalis* (de Deniker)[1]. Or quelle est la mortalité par cancer dans ces trois groupes de provinces? Si l'on se limite à faire la moyenne des taux de mortalité, on trouve: *Homo alpinus*, 34,66; *Homo orientalis*, 39,02; *Homo nordicus*, 39,20. Si l'on calcule les moyennes pondérées, on trouve: 34,88; 39,00; 38,69. La zone méridionale où les brachymorphes bruns sont assez fréquents aurait donc un taux inférieur aux taux des autres zones.

[1] Des recherches spéciales sur les brachycéphales de la Zélande se trouvent dans le mémoire de Victor Jacques, «Bulletin de la Société d'anthropologie de Bruxelles», 1889, page 157. On y montre, par exemple, comment, dans certaines zones de la Zélande, les crânes d'un indice supérieur à 80 (brachymorphes) atteignent le 54, le 85, le 81 % de la totalité des crânes examinés.

Cinquième chapitre

Par le professeur Alfredo NICEFORO.

QUELQUES OBSERVATIONS SUR LA RACE ET LE CANCER DANS LES PAYS SCANDINAVES, EN BAVIÈRE ET DANS LES PAYS DE L'ANCIEN EMPIRE D'AUTRICHE, POUVANT SERVIR DE CONTRÔLE AUX OBSERVATIONS DÉJA FAITES.

I.

Les quelques observations qui vont suivre, à propos de la race et du cancer parmi les populations scandinaves et certaines autres populations, ne seront formulées qu'à titre de contrôle des hypothèses provisoires que les chapitres précédents peuvent suggérer.

Les pays scandinaves: Suède, Norvège et Danemark forment un bloc assez homogène, les deux premiers surtout, de population du type *Homo europaeus:* taille très élevée, crâne dolichomorphe, face allongée, pigmentation claire. Nous avons déjà rencontré ce type en Belgique et en Hollande; il en existe des traces dans le nord-est de la France; mais c'est dans les pays scandinaves qu'il se présente de la manière la plus homogène. « Il s'agit d'une continuité de type aussi bien dans l'espace que dans le temps, puisque la physionomie ethnique dont nous venons de parler était déjà ce qu'elle est aujourd'hui — dans cette circonscription géographique — aux âges de la pierre et du bronze[1]. »

Si la race avait une influence sur le cancer et si cette influence était différente pour chacun des types *Homo europaeus, alpinus* ou *mediterraneus,* c'est peut-être en observant ce bloc homogène de scandinaves et en le comparant à ce que nous savons déjà des deux autres races qu'on aurait le plus de chances de projeter un peu de clarté sur le problème des rapports de la race et du cancer.

La première chose à faire, c'est de comparer le taux de la mortalité par cancer des pays que nous avons déjà examinés à ceux de la Suède et de la Norvège, en tenant compte de la composition ethnique de ces différents pays.

L'Italie dolichobrune du sud *(Homo mediterraneus)* donne, dans son ensemble, un taux de mortalité par le cancer d'environ 12 pour 10.000 habitants (40 ans et plus, 1919-1921).

L'Italie brachymorphe du nord *(Homo alpinus* et *Homo dinaricus)* donne, dans son ensemble, un taux d'environ 24 pour 10.000 habitants (donc, bien plus élevé que le taux précédent).

L'Espagne dolichobrune *(Homo mediterraneus)* donne, pour sa part, dans son ensemble, un taux de 22 pour 10.000 habitants (40 ans et plus, 1919-1921). Laissons de côté le Portugal, étant donné le très grand nombre de décès pour causes inconnues ou mal définies que présentent plusieurs de ses provinces.

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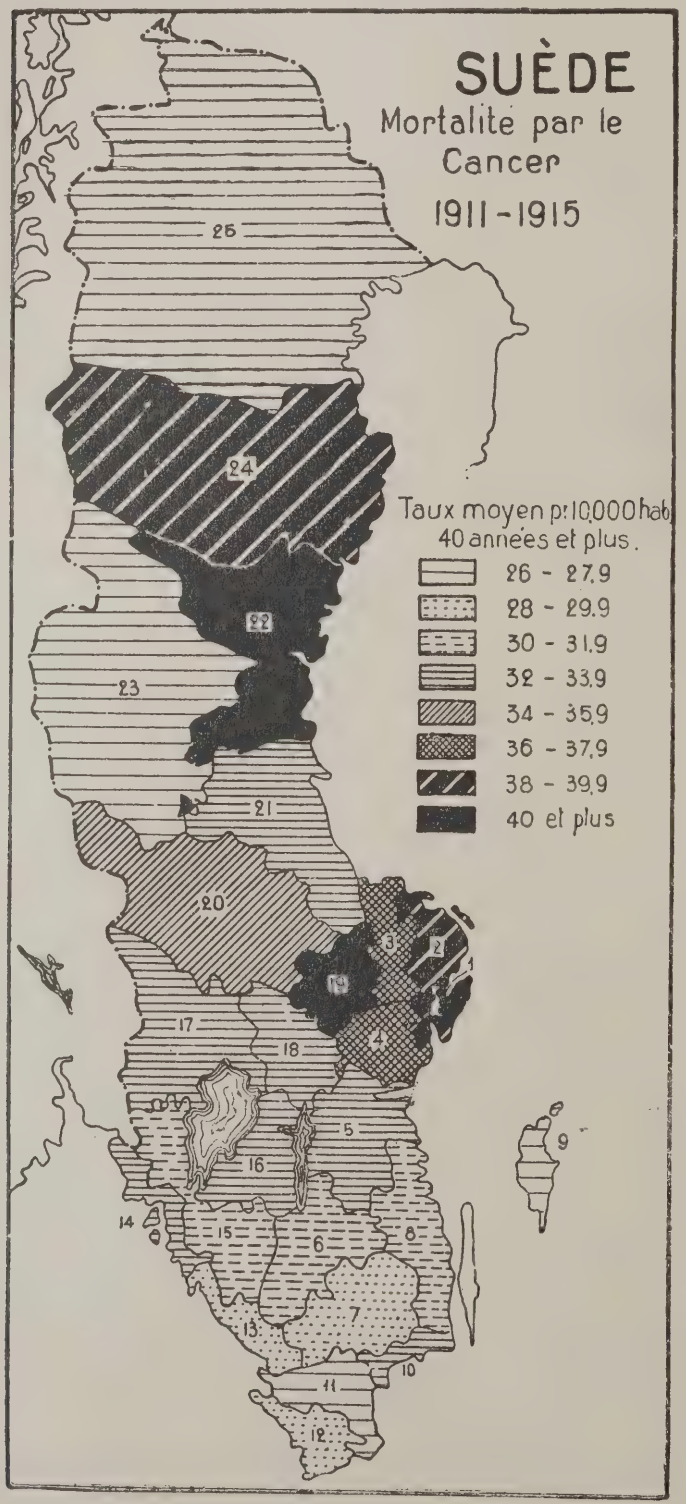
[1] Eug. PITTARD: *Les races et l'histoire,* déjà cité, page 259.

Figure N° 35.

SUÈDE.

Répartition géographique de la mortalité par le cancer parmi la population âgée de 40 ans et plus, période 1911-1915.



LISTE DES PROVINCES DE LA SUÈDE

arrangées selon la numérotation employée dans la figure ci-contre.

1. Stockholm-ville
2. Stockholm
3. Upsala
4. Södermanland
5. Östergötland
6. Jönköping
7. Kronoberg
8. Kalmar
9. Gotland
10. Blekinge
11. Kristianstad
12. Malmöhus
13. Halland
14. Göteborg & Bohus
15. Älvsborg
16. Skaraborg
17. Värmland
18. Örebro
19. Västmanland
20. Kopparberg
21. Gävleborg
22. Västernorrland
23. Jämtland
24. Västerbotten
25. Norbotten.

La Belgique, où les dolichoblonds et les brachymorphes sont mélangés, mais où les dolichoblonds *(Homo nordicus)* sont très nombreux, donne, dans son ensemble, un taux de mortalité par le cancer, de 26 pour 10.000 habitants (40 ans et plus, 1919-1922).

La Hollande, où la population, appartient en grande partie, au type dolichoblond *(Homo nordicus)* donne un taux très élevé: 38 pour 10.000 habitants (40 ans et plus, 1919-1921).

Eh bien, à part l'erreur de logique dans laquelle on pourrait tomber, erreur que les logiciens indiquent sous la désignation de: *fausse cause* ou *accident*, c'est-à-dire un sophisme qui considère comme la cause ce qui n'est pas la cause, comme essentiel et universel ce qui n'est qu'accidentel et particulier, à part, donc, l'erreur de logique en question, — qu'on indique aussi par la formule : *cum hoc, ergo propter hoc*, — pourrait-on dire d'après les rapprochements que nous venons de rappeler, que les dolichobruns sont les moins touchés par le cancer, et que les brachycéphales le sont un peu plus, tandis que les dolichoblonds se placent en première ligne ? La Suède et la Norvège sont les pays typiques des dolichoblonds. Que nous révèle le taux de mortalité cancéreuse de ces pays?

Prenons la Suède, d'abord. Il s'agit d'un pays foncièrement dolichoblond, qui possède cependant des zones où ce type est moins nombreux (voir le cartogramme que nous avons déjà donné, au commencement de cette étude (page 43), d'après les observations de Lundborg). Ces zones sont celles de l'extrême-nord: Lappland et Västerbotten et certaines zones de l'extrême-sud: Skåne, Halland, Blekinge, Gotland. Les dolichoblonds y sont en proportion un peu moins élevée, c'est-à-dire que, dans l'extrême-nord, il doit y avoir des éléments lappons qui sont brachycéphales et des éléments finnois qui sont mésocéphales, ou moins dolichocéphales que les vrais dolichocéphales. L'extrême-sud, d'autre part, s'est probablement trouvée sous l'influence des migrations brachymorphes provenant du sud; la traînée « brachycéphale » traversant diagonalement l'Europe y a laissé ses traces.

Mais ces problèmes seront indiqués avec quelque détail au chapitre spécial qui sera consacré aux pays scandinaves (par mon collègue le professeur Pittard); ici, il s'agit tout simplement d'examiner le taux de mortalité pour l'ensemble de ce pays dolichoblond.

Ce taux (40 ans et plus, 1911-1915) s'élève à 33,4 pour 10.000 habitants: il serait presque certainement un peu plus élevé s'il était calculé pour la même période, plus récente, d'après laquelle ont été calculés les taux des autres pays (1919-1921). C'est un taux qui se rapproche du taux des dolichoblonds hollandais et qui est bien plus élevé que les taux de la Belgique (dolichoblonds et quelques brachymorphes) et du nord brachycéphale italien. Il est, enfin, presque le double du taux de l'Italie du sud (dolichobruns), et il s'élève au-dessus du taux espagnol (dolichobruns) que de douze unités. (Voir figure 35 ci-contre.)

Peut-on remarquer quelques différences entre la mortalité par cancer des zones suédoises, moins pures, de l'extrême-nord, ou de l'extrême-sud (quelques brachymorphes), et celle du reste du pays? La réponse est incertaine — du moins d'après un premier coup d'œil sur les chiffres — car tandis que la mortalité cancéreuse pour le pays tout entier est de 33,4, ainsi que nous l'avons déjà dit, dans le Norbotten et le Västerbotten (extrême-nord), elle descend à 27,48 ou elle monte à 38,15 et dans l'extrême-sud, provinces de Kristianstad et de Malmö (Skåne), elle se chiffre à 26,39 et à 29,63; dans la zone de Blekinge à 32,09, dans celle de Halland à 28,32. Il y a quelque apparence d'une moindre mortalité dans le Norbotten, pour l'extrême-nord, et dans les zones de l'extrême-sud. Mais il serait bien téméraire de formuler des conclusions. Il est bon de rappeler qu'en Suède les décès sont inscrits au lieu du domicile habituel du défunt, ce qui constitue une bonne garantie pour l'établissement et l'étude de la répartition des causes de décès.

La Norvège aussi est un pays essentiellement dolichoblond *(Homo nordicus)* quoiqu'on y trouve quelques mosaïques d'éléments étrangers, provenant peut-être d'émigrations finniques et autres. Sur les côtes, on constate des localisations sous-brachycéphales (16 et même 24% de brachymorphes) mais de grande taille. Nous nous bornerons

Figure N° 36.

NORVÈGE.

Répartition géographique de la mortalité par le cancer parmi la population âgée de 40 ans et plus, période 1919-1921.

LISTE DES DÉPARTEMENTS DE LA NORVÈGE

arrangés selon la numérotation employée dans la figure n° 36.

1. Kristiania (Oslo) = Kristiania (Oslo)
2. Akershus = Akershus
3. Smaalenene = Østfold
4. Buskerud = Buskerud
5. Jarlsberg og Larvik = Vestfold
6. Hedemarken = Hedmark
7. Christians = Opland
8. Bratsberg = Telemark
9. Nedenes = Aust-Agder
10. Lister og Mandal = Vest-Agder
11. Stavanger = Rogaland
12. Søndre Bergenhus = Hordaland
13. Bergen = Bergen
14. Nordre Bergenhus = Sogn og Fjordane
15. Romsdal = Møre
16. Søndre Trondhjem = Sør-Trøndelag
17. Nordre Trondhjem = Nord-Trøndelag
18. Nordland = Nordland
19. Tromsø = Troms
20. Finnmarken = Finnmark

à noter que le taux de mortalité par cancer pour la Norvège est de 33,6 pour 10.000 habitants (40 ans et plus, 1919-1921). Il se rapproche donc de celui de la Suède, mais peut-être, est-il de quelque peu inférieur à celui-ci.

En somme, le taux de mortalité des dolichoblonds est assez élevé (Hollande, Suède, Norvège), il l'est un peu moins en Belgique où cependant l'*Homo nordicus* est assez fréquent; le taux des brachymorphes *(Homo alpinus* et *dinaricus)* est bien plus bas (Italie du nord), mais l'Espagne dolichobrune *(Homo mediterraneus)* donne un taux qui répète presque celui de l'Italie brachymorphe du nord. Ce sont surtout les dolichobruns du sud d'Italie qui présentent le taux le plus bas, bien éloigné de celui des brachymorphes et encore plus éloigné que celui des dolichoblonds.

II.

Les pays scandinaves, — Suède et Norvège, — nous ont servi d'exemple pour quelques observations sur les populations dolichoblondes de race *Homo nordicus* ou *europaeus*. La Bavière mérite d'attirer notre attention, puisqu'elle constitue l'un des blocs relativement homogènes de la coulée brachymorphe, qui traverse diagonalement l'Europe.

La Bavière se trouve dans cette partie de l'Allemagne méridionale qui est si sensiblement différente, au point de vue anthropologique, de la partie septentrionale. Tandis que le nord de l'Allemagne est habité par des représentants en bon nombre de l'*Homo europaeus*, dolichoblond, le midi, Bavière comprise, est habité par le type opposé, que nous venons d'indiquer *(alpinus* et *dinaricus)*.

L'indice céphalique (sur le crâne) a été étudié en Bavière par Ranke, qui a examiné et mesuré de nombreux exemplaires, tirés des ossuaires de différentes parties du pays: ossuaires de Ebrach, Regensburg, Waischenfeld, Michelsfeld, Cham, Althoetting, Priem, Beuerberg, Wallenshauser, Aufkirchen. Les deux premiers ossuaires sont très anciens; pour les autres, les indices céphaliques moyens sont les suivants, dans l'ordre correspondant à celui des ossuaires: 84,8, 83,4, 82,3, 82,7, 83,6, 83,3, 85,2, 83,2. Wallenshauser (85,2), Beueberg (83,3), Priem (83,6), Althoetting (82,7), se trouvent dans la partie méridionale du pays; Aufkirchen (83,2), dans la partie centrale; les autres ossuaires, dans le nord et le nord-est (84,8, 83,4, 82,3)[1].

Il serait bien téméraire d'étendre le résultat obtenu par l'examen de chaque ossuaire à la zone très large des pays environnants, et de dessiner une carte géographique de l'indice céphalique de la Bavière à l'aide de ces chiffres seulement; par conséquent, il serait bien téméraire de faire ressortir nettement, d'après ces moyennes, les zones plus brachycéphales et celles qui le sont moins. Cependant, les mensurations de Ranke sont suffisantes, pour nous faire comprendre qu'il s'agit d'un pays fortement brachycéphale. Ce bloc assez homogène présente des pourcentages élevés de coloration foncée des cheveux; c'est un bloc que nous pouvons considérer comme constitué soit par des représentants de l'*Homo alpinus*, soit par des variétés de cette grande catégorie de brachymorphes: *alpinus* proprement dit, et *dinarique* de Deniker. Or, quel est le taux de mortalité cancéreuse de ce bloc d'hommes, *alpinus* et, en partie, *dinaricus*?

Le tableau ci-après nous apprend que ce taux est extrêmement élevé: 41,88 décès pour 10.000 habitants (40 ans et plus, 1908-1912). C'est le taux global le plus élevé que nous ayons rencontré jusqu'à présent. Même si l'on s'arrête au taux de chacune des huit régions formant la Bavière (voir figure 37 et tableau, pages 116 et 117), nous devons constater que ces taux, tout en présentant des différences entre eux (d'un minimum de 32,51 à un maximum de 51,01) restent toujours à un degré très élevé de l'échelle que nous connaissons.

Il s'ensuit que, si l'on devait simplement juger d'après les éléments que nous avons étudiés jusqu'à présent, et si l'on devait conclure simplement en comparant la répartition

[1] J. Ranke, Munich, 1881 et 1883.

LISTE DES SUBDIVISIONS DE LA BAVIÈRE

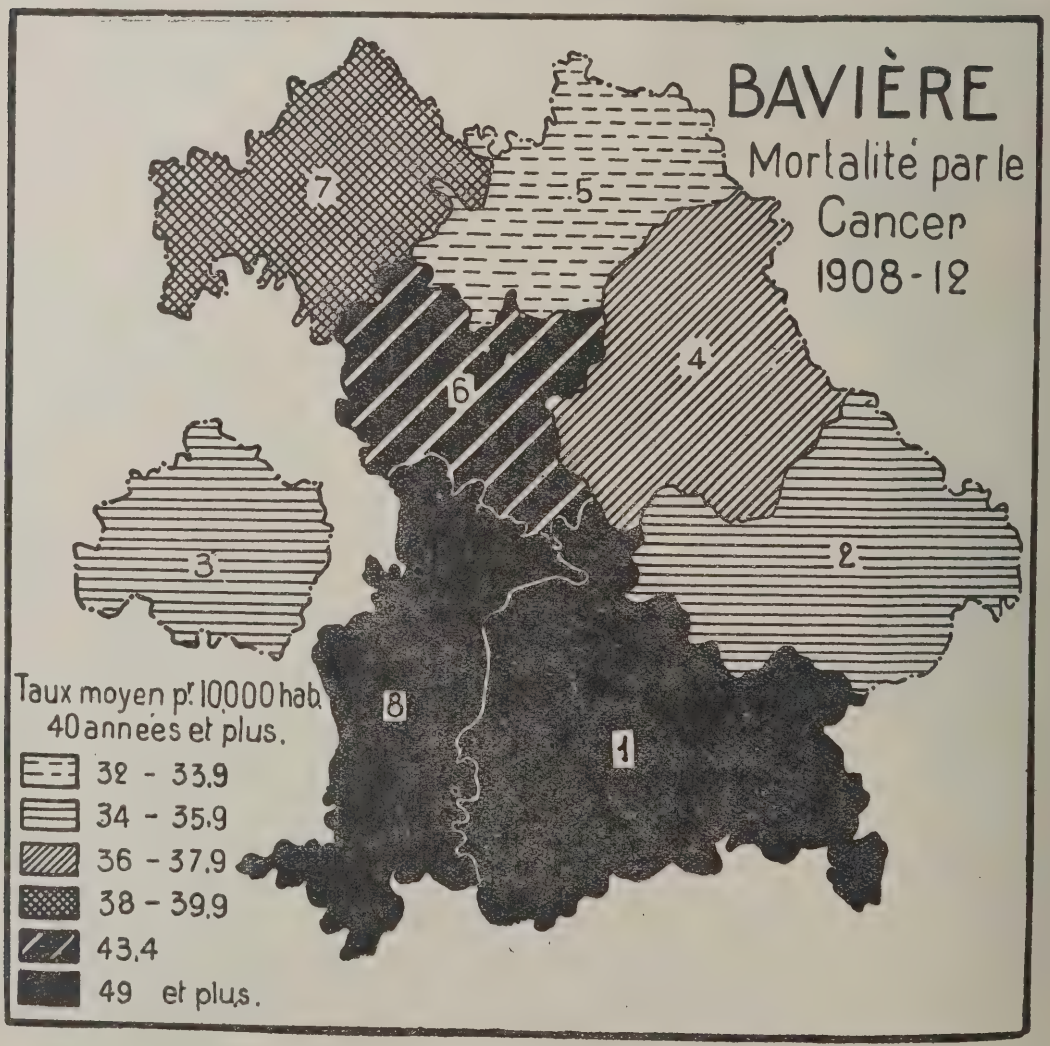
arrangées selon la numérotation employée dans la figure N° 37.

1. Haute-Bavière
2. Basse-Bavière
3. Palatinat
4. Haut-Palatinat
5. Haute-Franconie
6. Moyenne-Franconie
7. Basse-Franconie
8. Souabe

Figure N° 37.

BAVIÈRE.

Répartition géographique de la mortalité par le cancer parmi la population âgée de 40 ans et plus, période 1908-1912.



de la race à celle de la mortalité par le cancer, les brachymorphes de la Bavière sembleraient occuper la première place dans l'échelle, ou, du moins, ils s'y trouveraient à côté des dolichoblonds, — les dolichobruns venant en dernière ligne.

Mortalité par le cancer en Bavière, par provinces et par sexe, chez la population âgée de 40 ans et plus, pendant la période de 1908 à 1912 [1].

Districts	Population 1910, 40 ans et au-dessus	Total des décès; période 1908-1912	Moyenne annuelle 1908-1912	Taux moyens annuels par 10.000 habitants
a) *Total*				
Haute-Bavière	415.504	10.598	2.119,6	51,01
Basse-Bavière	201.218	3.548	709,6	35,27
Palatinat	232.252	4.046	809,2	34,84
Haut-Palatinat	161.585	2.909	581,8	36,01
Haute-Franconie	179.431	2.917	583,4	32,51
Moyenne-Franconie	243.600	5.292	1.058,4	43,41
Basse-Franconie	196.351	3.814	762,8	38,85
Souabe	217.285	5.365	1.073,0	49.38
Bavière	*1.838.226*	*38.489*	*7.697,8*	*41,88*
	Population 1910; 40 ans et au-dessus	Total des décès période 1910-1912	Moyenne annuelle 1910-1912	Taux moyens annuels par 10.000 habitants
b) *Hommes*				
Haute-Bavière	197.223	2.767	922.3	46,77
Basse-Bavière	97.196	969	323	33,23
Palatinat	107.291	1.087	362,3	33,77
Haut-Palatinat	76.693	775	256,3	33,68
Haute-Franconie	84.712	796	265,3	31,32
Moyenne-Franconie	114.268	1.375	458,3	40,11
Basse-Franconie	92.996	1.087	362,3	38,96
Souabe	103.798	1.540	513,3	49,45
Bavière	*874.387*	*10.396*	*3.465,3*	*39,63*
c) *Femmes*				
Haute-Bavière	218.281	3.772	1.257,3	57,60
Basse-Bavière	104.022	1.246	415,3	39,33
Palatinat	115,961	1.366	455,3	39,27
Haut-Palatinat	84.622	958	319,3	37,74
Haute-Franconie	94.719	999	333	35,16
Moyenne-Franconie	129.332	1.901	633,6	49,00
Basse-Franconie	103,355	1.883	427,6	41,38
Souabe	113.547	1.822	607,3	49,16
Bavière	*963.839*	*13.347*	*4.449*	*46,16*

Remarquons, d'ailleurs, que les taux bavarois accusent des oscillations assez sensibles d'une province à l'autre (voir la figure 38), ce qui montrerait que le taux de mortalité d'une race homogène, ou relativement homogène, peut présenter des écarts assez forts. Dans les statistiques bavaroises, les décès sont enregistrés au lieu du domicile habituel, et non au lieu où le décès est survenu; ce qui donne plus de valeur à l'interprétation étiologique et médicale des statistiques.

[1] Les taux moyens ont été calculés d'après les chiffres des décès par le cancer *pour toute la population*, divisée par le chiffre de la population âgée de 40 ans et plus.

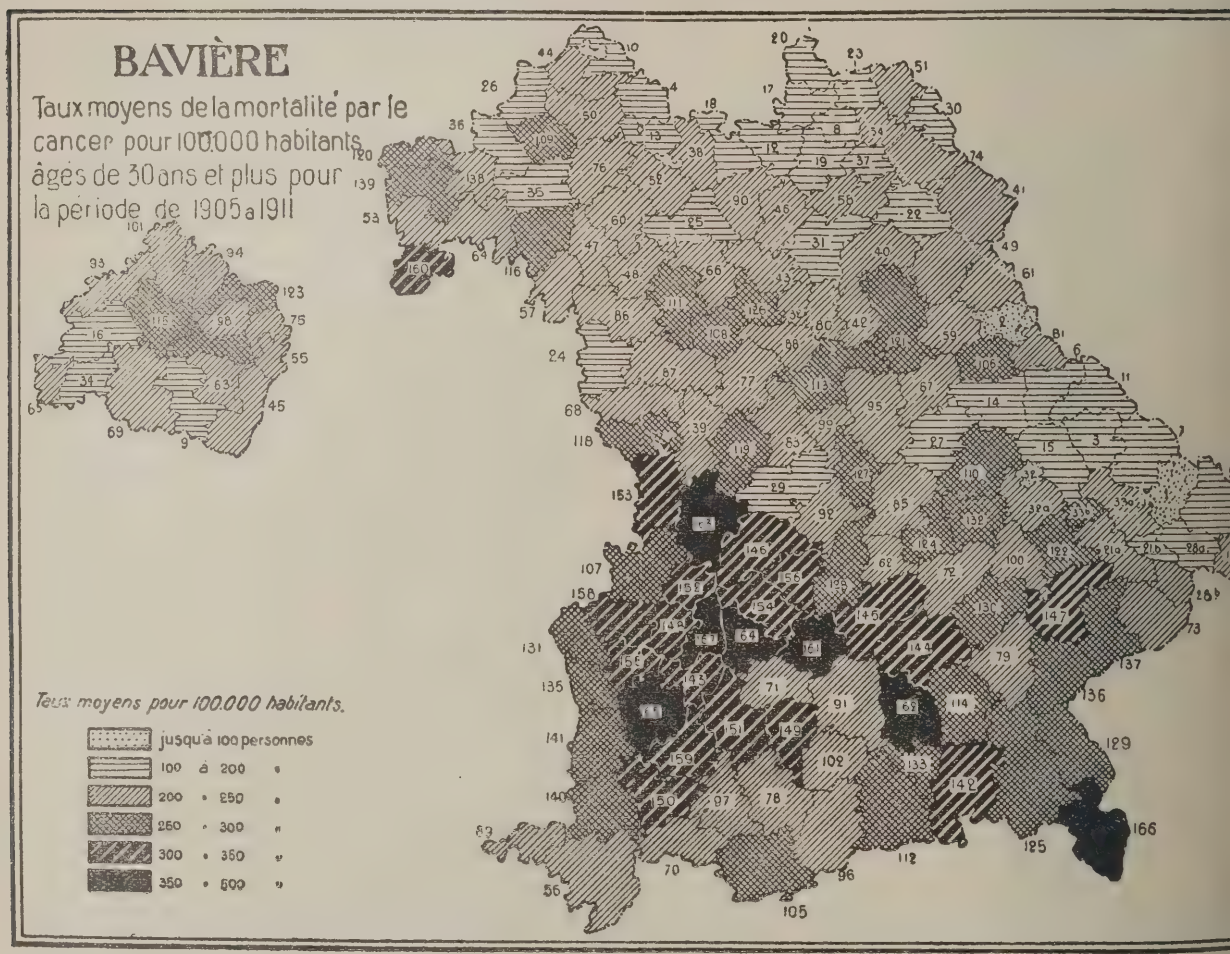
La proportion des décès par le cancer parmi la population de moins de 40 ans, pendant la période de 1908 à à 1912, s'élève à 7,04%.

La proportion des décès par le cancer chez les individus de moins de 40 ans, pendant la période 1910-1912, s'élève à 5,9% pour les hommes et à 7,6 % pour les femmes.

Figure N° 38.

BAVIÈRE.

Répartition géographique de la mortalité par le cancer parmi la population âgée de 30 ans et plus, période 1905-1911.


BAVIÈRE
Taux moyens de la mortalité par le cancer pour 100.000 habitants âgés de 30 ans et plus pour la période de 1905 à 1911
Taux moyens pour 100.000 habitants.
jusqu'à 100 personnes
100 à 200 »
200 » 250 »
250 » 300 »
300 » 350 »
350 » 500 »

III.

Les pays de l'ancien empire autrichien (non compris le royaume de Hongrie) forment aussi un bloc assez homogène de population brachymorphe.

Ces brachymorphes peuvent-ils tous rentrer dans la catégorie *Homo alpinus*, ou bien faut-il les répartir en sous-catégories: 1° *Homo alpinus* proprement dit, 2° *dinarique* ou *adriatique* ?

Les pays de l'ancien empire se partageaient surtout en pays de langue allemande, et en pays de langue slave. Dans le Trentin, en Istrie, et même en Dalmatie, se trouvaient aussi de grandes étendues de populations italiennes. Cependant, les «Allemands» d'Autriche

ne présentent aucunement les caractères anthropologiques des Germains du nord *(Homo nordicus* ou *europaeus)*, mais plutôt ceux des Allemands du sud. De même, les Slaves du nord de l'empire d'Autriche se rapprochent considérablement, au point de vue anthropologique, des Allemands du sud (par exemple la Bavière), appartenant au type *alpinus*, et dinarique. Quant aux Italiens, leur brachycéphalie ou leur sous-brachycéphalie, les identifie avec les brachymorphes de la vallée du Pô et de la Vénétie (*alpinus* et dinarique). Il s'agit donc, quelle que soit la dénomination historique et linguistique employée, d'un bloc qui est brachymorphe en très grande partie.

En effet, la Haute-Autriche, la Basse-Autriche, Salzbourg, la Styrie (en partie), qui sont des pays de langue allemande, ont des indices (accusant des types brachymorphes plus ou moins accentués) de 83 à 84; parmi les Allemands de la Styrie, par exemple, les dolichomorphes ne se rencontrent que dans la proportion de 20 % environ, tandis que 80 % de la population se compose de brachymorphes. Les Allemands de la Carinthie eux aussi, sont brachymorphes, avec un indice de 83 et plus. Ceux qui bordent le nord du Trentin (Haut-Adige) ont également des indices très élevés (84 et 85); dans cette région, et dans la région limitrophe, qui fait encore aujourd'hui partie de l'Autriche, on trouve même des zones d'hyperbrachycéphalie de 86 et de 87. Quant aux Allemands qui peuplent une partie de la Bohême et de la Moravie, ils donnent toujours des indices de brachycéphalie: 85 en Bohême et 86 en Moravie.

Les populations de langues slaves de l'ancien empire présentent, elles aussi, des indices de brachycéphalie et de sous-brachycéphalie: les Slovènes de la Carniole ont un indice de 84 environ, avec 20 % seulement de dolichomorphes; les Croates et les populations slaves d'une partie de la Dalmatie ont un indice de brachycéphalie: 83, et les populations slaves de la Bohême, de la Moravie, de la Slovaquie sont également brachymorphes.

Enfin, les Italiens de l'Istrie, de la côte dalmate, du Trentin, sont brachymorphes; dans le Trentin, par exemple, les indices sont de 82,4 et 83,5. Certes, on trouve ça et là des infiltrations. Les grandes agglomérations urbaines, les côtes maritimes, les ports surtout, présentent, en général, des indices céphaliques supérieurs ou inférieurs à ceux du territoire environnant; nous avons tâché de démontrer ailleurs que ce fait ne provient pas de l'influence du milieu, mais de la force d'attraction qu'exercent ces endroits sur les populations les plus lointaines. Il est tout naturel qu'en raison des éléments lointains et étrangers qui viennent s'y établir par migration lente et invisible, ces lieux d'attraction voient se modifier leur composition céphalique, tandis que celle des populations voisines reste la même. Les centres d'attraction — villes, ports maritimes, croisement de routes commerciales, etc., placés en pays brachymorphes — attirent les dolichomorphes des pays éloignés, tandis que ces mêmes lieux d'attraction, placés en pays dolichomorphes, attirent les brachymorphes lointains, d'où changement d'indice céphalique *in loco*, à ces endroits. Ce phénomène, — soit dit en passant, — peut être constaté en comparant entre eux les indices céphaliques des différentes classes sociales. Les classes sociales supérieures, plus hétérogènes et plus mobiles que les classes sociales inférieures, présentent, en effet, une variabilité de l'indice céphalique plus marquée que les classes inférieures [1].

Il y a donc certainement des bigarrures dans le bloc franchement brachymorphe dont nous venons de parler; mais, dans son ensemble, l'ancien empire est brachymorphe. Nous pouvons donc poser la question: Quelle est la mortalité par le cancer chez les populations brachymorphes ?

Les tableaux qui suivent et la figure 39 donneront la réponse.

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[1] A. Niceforo: *Anthropologie der nichtbesitzenden Klassen*, Leipzig-Amsterdam, 1910, pages 258 à 269.

LISTE DES PAYS COMPOSANT L'ANCIENNE AUTRICHE

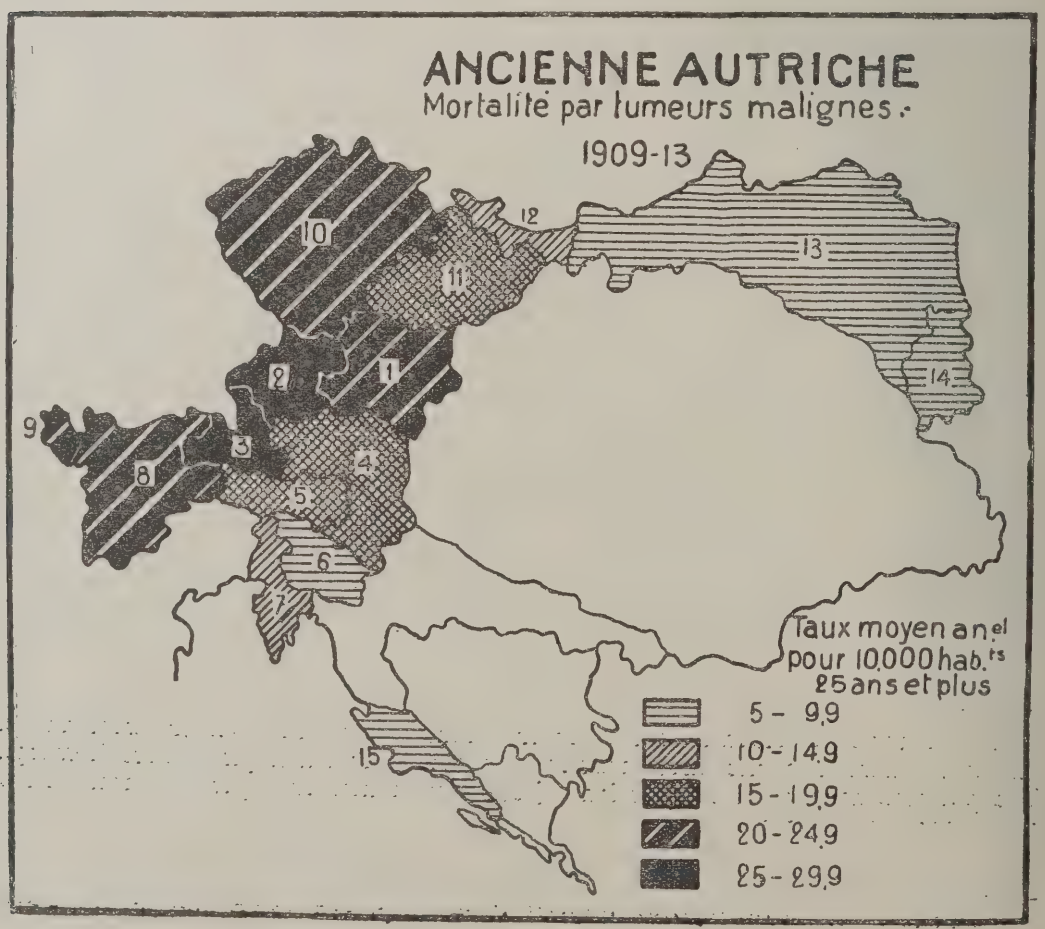
arrangés selon la numérotation employée dans la figure N° 39.

1. Basse-Autriche
2. Haute-Autriche
3. Salzbourg
4. Styrie
5. Carinthie
6. Carniole
7. Istrie
8. Tyrol
9. Vorarlberg
10. Bohême
11. Moravie
12. Silésie
13. Galicie
14. Bucovine
15. Dalmatie

Figure N° 39.

ANCIENNE AUTRICHE.

Répartition géographique de la mortalité par le cancer, *parmi la population agée de 25 ans et plus, période 1909-1913.*



Voici ce que l'on peut observer en consultant ces documents:

1. La mortalité par le cancer, dans l'ensemble de l'empire, s'élève à 30 pour 10.000 habitants (40 ans et plus, 1909–1913; voir le tableau page 123.) Ce taux doit être augmenté de quelques unités, pour pouvoir être comparé aux taux des autres pays que nous avons passés en revue, puisqu'il a trait à la période 1909–1913, tandis que les autres portent sur une époque postérieure.

Taux moyen annuel de la mortalité par le cancer, d'après la population âgée de 25 ans et plus pour la période de 1909 à 1913.

(Pour 10.000 habitants.)

Nos sur la carte	Provinces	Décès par le cancer, période de 1909 à 1913		Population (1910) âgée de 25 ans et plus	Taux moyen annuel pour 10.000 habitants 25 ans et plus
		Total	Moyenne		
1	Basse-Autriche	21.261	4.252,2	1.930.154	22,03
2	Haute-Autriche	5.868	1.173,6	455.771	25,83
3	Salzbourg	1.532	306,4	114.667	26,72
4	Styrie	7.173	1.434,6	770.007	18,63
5	Carinthie	1.578	315,6	201.016	15,70
6	Carniole	1.218	243,6	248.886	9,79
7	Trieste	1.141	228,2	124.390	18,35
	Goritz-Gradisca	616	123,2	122,753	10,04
	Istrie	848	169,6	188.140	9,01
	Région de la Côte	2.605	521	435.283	11,97
8	Tyrol	5.281	1.056,2	492.588	21,44
9	Vorarlberg	913	102,6	75.311	24,25
8 et 9	Tyrol et Vorarlberg ensemble	6.194	1.238,8	567.899	21,81
10	Bohême	35.586	7.117,2	3.437.780	20,70
11	Moravie	12.801	2.560,2	1.298.566	19.72
12	Silésie	2.630	526	351.029	14,98
13	Galicie	13.767	2.753,4	3.484.466	7,90
14	Bukovine	1.898	379,6	360.855	8,52
15	Dalmatie	778	155,6	296.509	5,25
	Total	114.889	22.977,8	13.952.504	16,47

2. Ce taux de 30 (et un peu plus) pour 10.000 habitants dans les pays brachymorphes dont nous parlons, est sans doute plus élevé, et de beaucoup, que les taux des pays ou des zones dolichobrunes (Italie du nord, Espagne), mais, d'une part, il est également supérieur au taux des zones brachymorphes du nord-Italie, et d'autre part, il est inférieur au taux de la Bavière brachymorphe. En outre, il est même supérieur au taux de la

Belgique, où les dolichoblonds sont en grande quantité. Les conclusions — toutes provisoires — que nous venons d'indiquer ne peuvent que confirmer les doutes qu'une étude de ce genre peut soulever.

3. Si l'on considère nos chiffres et notre cartogramme, on peut remarquer que, malgré l'homogénéité *relative* de la race, les populations de l'empire accusaient des taux très différents de mortalité par le cancer. On passe de taux minimes: 9,19 (Dalmatie), 14,55 (Galicie), 15,97 (Carniole), à des taux très élevés: 48,57 (Salzbourg), 43,05 (Haute-Autriche), 45,30 (Vorarlberg), qui rappellent les taux extrêmement élevés de la Bavière. L'homogénéité *relative* de la race ne suffit donc pas à niveler, ou presque, les différences de mortalité d'un point à l'autre du territoire. Pourrait-on en conclure que la race n'a pas d'influence fondamentale (du moins la race étudiée à l'aide des caractères que nous venons d'indiquer) sur la répartition du cancer ? Certes non, puisque l'existence d'un rapport, même très étroit, entre deux phénomènes pourrait être cachée ou pourrait ne pas jouer sous l'influence de l'action d'autres phénomènes qui viennent faire contrepoids.

4. Nous venons de parler de l'homogénéité relative de la race. Les populations de l'ancien empire sont en très grande quantité des brachymorphes; mais, si la grande catégorie des brachymorphes qui était considérée jusqu'à hier sous l'étiquette unique: *Homo alpinus* doit à son tour être répartie en plusieurs catégories: *Homo alpinus* proprement dit, *Homo dinaricus*, *Homo orientalis* — et ces trois types de la même catégorie brachymorphe (trois *variétés* de *l'espèce* euro-asiatique de Sergi ?) sont représentées toutes les trois sur le territoire de l'ancien empire — ne pourrait-on pas soupçonner que des différences aussi sensibles que celles que nous avons constatées proviennent également de ces différences existant entre les types parmi lesquels se répartit la catégorie des brachymorphes ? Les éléments qui pourraient permettre d'essayer de contrôler cette hypothèse font défaut.

5. Nous pouvons être sûrs, par contre, qu'une partie de ces différences locales dans les taux de mortalité doit être attribuée soit à l'attraction des grands centres urbains, soit aux différences de moyens de diagnostic et de connaissances médicales. Cette raison pourrait nous expliquer, par exemple, pourquoi les taux de la Dalmatie, de la Carniole, de la Galicie, sont si bas. Voici, d'ailleurs, un tableau indiquant, pour chacune des quinze zones de l'ancien empire, combien de décès, sur 100 décès, ont été certifiés par un médecin. A côté de chaque taux ou pourcentage, nous donnons le rang qu'occupe chaque zone (de 1 à 15), par ordre croissant de mortalité ou de pourcentage.

Certes, il n'y a pas de relation rigoureusement parfaite entre l'ordre de la mortalité croissante et le pourcentage croissant des décès certifiés par un médecin; mais il y a un rapport de co-variation assez évident. L'indice des rangs donne + 0,93, indiquant une corrélation directe assez accentuée: lorsque le taux de mortalité par le cancer augmente, le pourcentage des décès certifiés par le médecin augmente également. D'ailleurs, il suffit de considérer les cas extrêmes: la Dalmatie, la Galicie, la Carniole, qui ont les taux minima de mortalité par le cancer, ont aussi les pourcentages minima de décès certifiés par un médecin, tandis qu'en Basse-Autriche, en Haute-Autriche, etc., où il n'y a pas d'enregistrement de décès sans certificat du médecin, les taux de mortalité par le cancer atteignent le maximum.

Territoires (par ordre de mortalité croissante par le cancer)	Mortalité (40 ans et plus) (1909-1913)	Pourcentage des décès certifiés par les médecins
Dalmatie	9,19 (1)	30,5 (2)
Galicie	14,55 (2)	27,6 (1)
Carniole	15,97 (3)	35,9 (4)
Bukovine	19,59 (4)	33,7 (3)
Région de la Côte	22,10 (5)	(80,0? (7))
Carinthie	27,30 (6)	77,5 (6)
Silésie	28,23 (7)	74,7 (5)
Styrie	31,92 (8)	83,7 (8)
Moravie	35,38 (9)	95,8 (10)
Bohême	36,99 (10)	99,9 (13)
Tyrol	38,17 (11)	94,2 (9)
Basse-Autriche	42,17 (12)	99,9 (13)
Haute-Autriche	43,05 (13)	99,3 (12)
Vorarlberg	45,30 (14)	98,4 (11)
Salzbourg	48,57 (15)	99,9 (13)
Ancienne Autriche	29,8	

6. Par conséquent, étant donné la grande influence que le « niveau sanitaire » des différentes zones de l'empire, très hétérogènes au point de vue social, exerce sur la répartition de la mortalité, nous pourrions nous contenter d'arrêter notre attention sur les zones où la totalité des décès est enregistrée après vérification du médecin; par exemple Salzbourg, Vorarlberg, Haute-Autriche, Basse-Autriche, Bohême. La race y est partout assez homogène (dans le sens de la catégorie brachymorphe, à l'exception de Vienne, Basse-Autriche, où il y a des bigarrures accentuées), quoique, dans la grande catégorie de ces brachymorphes, il y ait lieu de distinguer les différents types dont nous avons déjà parlé. Or, les taux de cancérosité pour les cinq zones sont respectivement de 48,57, 45,30, 43,05, 42,17, 36,99. Il s'agit là de taux très élevés, plus élevés que les taux des pays ou zones dolichoblondes que nous avons examinés jusqu'à présent. Si l'on voulait, et si l'on pouvait conclure, nous resterions encore une fois indécis sur la place que les brachymorphes occupent, par rapport aux dolichoblonds, en ce qui concerne le cancer.

IV.

Le tableau ci-après résume, d'une manière très abrégée, quelques-uns des résultats (si toutefois il convient de se servir de ce mot) que nous venons d'obtenir. On y trouve les taux de mortalité par le cancer, d'une part, pour l'*Homo mediterraneus*, et, d'autre part, pour l'*Homo alpinus* (mélangé au type dinarique) et, enfin, les taux relatifs à l'*Homo europaeus* (ou *nordicus*):

Mortalité par le cancer

(*pour 10.000 habitants, les deux sexes réunis, population âgée de 40 ans et plus, 1919-1921.* Voir les notes pour les cas où ces indications doivent être changées.)

Homo mediterraneus	*Homo alpinus* (mél. au type dinarique et autre brachymorphe)	*Homo europaeus*
Italie du sud [1] 11,1 - 12,8	Italie du nord [2] 14,0 - 31,3	
Espagne . . . 21,99		
Portugal (1915-1919) . . . . 8,5 (?)		
		Belgique. . . . 26,09
		Hollande . . . 37,95
		Suède. . . . . 33,35 [5]
		Norvège. . . . 33,58
	Bavière . . 41,88 [3]	
	Autriche . . 9,19 - 48,57 [4]	

[1] Sardaigne, Calabre, Sicile, Pouilles, c'est-à-dire les régions où l'on trouve le type *Homo mediterraneus* à l'état le moins hétérogène. Si l'on considère l'Italie du sud tout entière, les taux oscillent entre 11,1 (Sardaigne) et 22,7 (Campanie), mais dans la Campanie, il y a mélange avec les brachymorphes alpins (voir les pourcentages que nous avons donnés au chapitre sur l'Italie).

[2] Lombardie, Vénétie, Emilie, Piémont.

[3] Période 1908-1912.

[4] Période 1909-1913.

[5] Période 1911-1915.

Sixième chapitre

Par le professeur Alfredo Niceforo.

QUELQUES CONSIDÉRATIONS FINALES: A) SUR LA VALEUR DES DONNÉES STATISTIQUES CONCERNANT LA MORTALITÉ DUE AU CANCER; B) SUR LE POINT DE VUE D'APRÈS LEQUEL ON PEUT ÉTUDIER LE RAPPORT ENTRE LES CARACTÈRES PHYSIQUES ET PHYSIOLOGIQUES DE L'HOMME ET LE CANCER.

I.

Toute étude fondée sur la répartition territoriale de la mortalité par cancer, telle qu'elle ressort des statistiques des causes de décès, peut soulever des objections assez importantes.

On peut faire observer, en effet, qu'étant donné la difficulté du diagnostic du cancer et le fait que les différentes régions d'un pays n'offrent pas les mêmes garanties et ne disposent pas des mêmes moyens pour l'établissement de leurs bulletins de décès, une répartition *statistique* des taux de mortalité par cancer peut très bien ne pas correspondre à la répartition *réelle*, car elle est plus ou moins influencée par le niveau sanitaire, social, etc., de chaque zone ou région.

Si l'on examine dans certains pays la répartition territoriale des décès par cause inconnue, on constate qu'elle est souvent, exactement ou approximativement, en raison inverse de la répartition territoriale des décès par cancer; dans les zones où le nombre des décès par cause inconnue est élevé, celui des décès par cancer est faible. En admettant que le niveau sanitaire et social d'une zone déterminée est indiqué plus ou moins exactement par le nombre de décès dus à une cause inconnue, la constatation que nous avons faite ci-dessus pourrait suggérer l'idée que dans les cas où ce niveau est plus bas, c'est-à-dire où le nombre de décès par cause inconnue est plus élevé, si le nombre des décès par cancer, tel que ce nombre ressort des statistiques, apparaît plus bas, c'est que ces statistiques ne correspondent probablement pas à la réalité. On ne peut s'empêcher de penser que sous la rubrique: cause inconnue, doivent se dissimuler un certain nombre de décès par cancer.

Il est évident que la possibilité d'établir un diagnostic exact et des bulletins de décès précis varie dans chaque pays d'une zone à l'autre et que ces différences exercent une certaine influence sur la statistique des causes de décès. Cette objection se présente d'ailleurs pour toute étude de géographie médicale basée sur la répartition territoriale des causes de décès, telle qu'elle est donnée par les statistiques officielles. Sans pousser le

pessimisme jusqu'à dire qu'une statistique des causes de décès ne reflète ni l'évolution de la mortalité pour chaque cause de décès, ni la répartition géographique de ces mêmes causes de décès, mais révèle simplement l'état des connaissances médicales et des moyens de diagnostic, ainsi que le soin apporté à l'établissement des bulletins de décès, il faut reconnaître que cet inconvénient existe et qu'il se présente sous sa forme la plus grave, lorsqu'on étudie des causes de décès dont le diagnostic est difficile ou malaisé comme celui du cancer.

Cependant, ceux qui affirment que le cancer est une « maladie de la civilisation moderne », pourraient, à leur tour, présenter une objection contre cette objection. Dans le cas où le niveau sanitaire est bas, pourraient-ils dire, le degré de diffusion de la civilisation moderne est, lui aussi, peu élevé; quoi de plus naturel, en conséquence, que le faible taux de cancérosité enregistré dans ces zones ?

Quant à la question relative au nombre des décès par cancer, qui pourraient se dissimuler sous la rubrique: « cause inconnue ou mal définie », il est peut-être utile de faire remarquer que, *dans certains pays* et au cours de *certaines périodes*, les décès qui figurent dans les statistiques comme étant dus à des causes inconnues ou mal définies portent surtout sur des enfants. Dans ce cas, il est évident que ces décès ne cachent pas de cas de décès par cancer, étant donné que le cancer ne commence à se présenter avec une certaine fréquence qu'à l'âge de 40 ans [1].

Voici, par exemple, ce qui arrive en Italie. Nous dirons, d'abord, que le nombre des décès figurant dans les statistiques comme étant dus à des causes ignorées ou mal définies a toujours diminué d'une manière continue et régulière depuis 1887-1889 jusqu'à 1913; puis, ce nombre est remonté pendant et après la guerre, mais il recommence à descendre sensiblement de nos jours (voir le tableau ci-dessous).

Décès pour cause inconnue ou mal définie en Italie.

	Période ou année	Chiffres absolus	Pour 1.000.000 d'habitants
Période de décroissance 1887-1889-1914. . .	1887–1899	21.000	664
	1900	10.519	
	1910	3.435	100
	1913	2.576	73
	1914	2.454	68
Période de guerre	1915	3.135	86
	1916	4.307	117
	1917	8.423	237
	1918	29.600	836
Période d'après-guerre	1919	10.800	
	1920	6.474	
	1921	9.272	
	1922	7.956	
	1923	5.767	

[1] A. Niceforo: *La mortalità per tumori maligni alle varie età della vita,* « Le Assicurazioni sociali », Roma, 1925.

Pour en venir ensuite à la composition par âge de ce groupe tout spécial de décédés, trois constatations s'imposent. En 1911-1913, c'est-à-dire à la période où le chiffre de décès dont nous nous occupons ici avait atteint son minimum, ce chiffre se composait en très grande partie d'enfants (voir le tableau A qui suit). Ainsi, en 1911-1913, sur 2.929 décès par cause inconnue ou mal définie, il y en avait 1.365 d'enfants qui ne comptaient que moins de 5 ans, et 1.502 de moins de 10 ans. Par contre, 728 seulement se rapportaient à des personnes âgés de 40 ans et plus. Il est vrai que dans le groupe tout entier on trouve 224 décès « d'âge inconnu ».

A. *Répartition par âge des décès par « cause inconnue ou non déclarée » en Italie, période 1911-1913.* (Moyennes annuelles, nombres absolus.)

-1	1-4	5-9	10-19	20-39	40-59	60-79	80 et plus	Age inconnu	Total
697	668	137	145	335	439	252	37	224	2.929

Toutefois, même si ces 224 décès de personnes d'âge inconnu pouvaient être tous considérés comme faisant partie du sous-groupe de 40 ans et plus, le sous-groupe ne serait composé que de 952 individus, sur les 2.929 du groupe tout entier.

Pour les mêmes années 1911, 1912, 1913, nous donnons aussi au tableau B ci-dessous les taux, — pour 1.000.000 d'habitants du même âge et du même groupe d'âge — de la mortalité pour *cause inconnue ou mal définie*. Elle monte à 700 et à 800 pour le tout premier âge, et elle descend rapidement après. A la dernière ligne du tableau, on trouvera la mortalité due au *cancer* pour chaque groupe d'âge et pour 1913, afin qu'on puisse se rendre compte de l'importance des deux catégories de mortalité (cancer; causes inconnues) aux différents âges de la vie.

Mais — deuxième constatation — pendant la période initiale, (1890 environ) la composition par âge de ce groupe de décès a été quelque peu différente, puisque le nombre de décès d'indi vidus âgés était assez élevé.

B. *Mortalité par cause inconnue ou mal définie en Italie, années 1911, 1912, 1913.* (Pour un million d'habitants de chaque groupe d'âge.)

Ages	-1	1-4	5-9	10-19	20-39	40-59	60-79	80 et plus	Total
1913	699	191	35	19	27	58	49	59	73
1912	632	173	30	19	30	54	93	126	74
1911	843	237	43	25	49	88	89	256	105
Mortalité par cancer 1913	47	41	25	27	162	1.239	3.789	4.305	667

Voici, à titre d'exemple, au tableau C, les chiffres concernant l'année 1891. Sur 22.027 décès formant le groupe tout entier, 8.181 étaient âgés de plus de 40 ans.

C. *Répartition par âge des décès pour « cause inconnue ou non déclarée » en Italie en 1891.*

Age	-1	1-4	5-9	10-19	20-39	40-59	60-79	80 et plus	Age inconnu	Total
Hommes . .	2.134	2.593	471	368	742	1.100	2.096	589	381	22.027
Femmes . .	2.146	2.729	529	459	1.004	1.177	2.547	672	290	
	4.280	5.322	1.000	827	1.746	2.277	4.643	1.261	671	

Pendant la période d'après-guerre, enfin, le nombre des décès par cause inconnue ou non déclarée augmente; et si la part revenant au sous-groupe des enfants est toujours très élevée, les individus composant le sous-groupe des vieillards sont aussi plus nombreux. Le nombre des décès d'âge inconnu surtout s'accroît sensiblement. S'agit-il, plutôt, de vieillards ? C'est ce qu'il serait difficile d'affirmer (voir le tableau D ci-dessous).

L'exemple que nous venons de donner montre assez clairement de quelle importance serait l'examen *a*) de la composition par âge du groupe des décès dus à des causes inconnues, *b*) de l'examen du nombre des personnes décédées sans âge déclaré dans le même groupe, pour toute étude qui s'efforce de tenir compte de la rubrique « cause inconnue » ne traitant la question de la répartition géographique de telle ou telle cause de décès.

D. *Répartition par âge des décès pour cause inconnue ou non déclarée en Italie, période 1917-1923.* (Chiffres absolus.)

Age:	-1	1-4	5-9	10-19	20-39	40-59	60-79	80 et plus	Age inconnu	Total
1917	738	765	197	191	360	498	798	283	10.583	8.423
1919	758	796	234	305	684	792	1.267	378	5.586	10.800
1920	1.006	666	248	315	614	655	909	214	1.847	6.474
1921	1.771	933	244	316	709	809	1.569	456	2.465	9.272
1922	1.395	657	122	251	562	630	1.412	432	2.495	7.956
1923	1.078	469	93	171	326	454	996	345	1.835	5.767

II.

Voici encore une cause possible de divergence entre la répartition *statistique* du cancer et la répartition réelle: des cas de cancer peuvent être englobés sous la rubrique « décès par sénilité »; certes, il ne faudrait pas mettre sur le compte du cancer la totalité ou même

la majorité des cas de décès par sénilité; mais il serait à souhaiter qu'on puisse tenir compte de cette *fuite*. Ainsi, il serait utile de transférer dans la rubrique « décès dus au cancer », un certain nombre des décès qui figurent sous celle de la sénilité. Mais dans quelle proportion ? [1]

Voici encore l'exemple de l'Italie qui nous servira d'ailleurs pour traiter sous peu un point intéressant de notre étude. Le tableau ci-dessous présente, en même temps, les chiffres absolus et les taux de mortalité par cancer, par marasme sénile et par causes inconnues, aux périodes extrêmes de la succession d'années sur laquelle portent les statistiques italiennes des causes de décès.

En dehors des considérations déjà formulées dans les pages précédentes, on y remarque:

a) Que le nombre *absolu* des décès par cancer est presque la moitié de celui des décès par marasme sénile;

b) Au contraire, le nombre *absolu* des décès par cause inconnue qui, il y a longtemps, était supérieur au nombre des décès par cancer, se réduit aujourd'hui à des chiffres très bas;

c) La *mortalité* par cancer a été toujours très inférieure à celle due au marasme sénile, et elle l'est encore; par comparaison avec la mortalité due à des causes inconnues, la mortalité par cancer était inférieure au commencement de la période examinée; aujourd'hui elle est bien supérieure.

Période ou année	Cancer		Marasme sénile		Causes inconnues ou non déclarées	
	Chiffre absolu	Pour un million d'habitants	Chiffre absolu	Pour un million d'habitants	Chiffre absolu	Pour un million d'habitants
1887-89	12.726	427	28.709	962	19.812	664
1890-92	13.027	428	32.411	1.064	21.945	721
1893-95	14.054	452	35.483	1.141	17.072	549
1896-98	15.926	502	38.603	1.217	11.941	376
1899-1901	16.894	523	45.332	1.402	9.792	303
1912	22.661	647	46.140	1.317	2.587	74
1913	23.639	667	47.858	1.351	2.576	73
1914	23.944	668	47.602	1.327	2.454	68
1915	24.259	667	53.060	1.458	3.135	86
1916	24.323	663	52.466	1.429	4.307	117
1917	23.984	675	56.193	1.580	8.423	237

d) La mortalité par marasme sénile est en augmentation: 1.000, 1.300, 1.400, 1.500 (pour un million d'habitants), du moins si l'on calcule cette mortalité par comparaison avec la population de tout âge; si l'on se rapporte, ce qui est plus logique, à la population de 60 ans et plus, on trouve les taux suivants (nous choisirons simplement trois exemples:

[1] Voir, par exemple: « Public Health Bulletin », N° 155, *The course of cancer mortality*, etc. (Dr. J. W. Schereschewsky), Washington, 1925, page 44.

les 28.709 décès de 1887-89, population de 60 ans et plus du recensement 1881; les 45.332 décès de 1899-1901, id., id. de 1901; les 50.000 décès environ de 1912-19, id. de 1911). Mortalité par sénilité: *113, 144, 142* pour 10.000 individus de 60 ans et plus, pour chacune des trois périodes respectivement.

Il s'ensuit, entre autres, que, si un certain nombre de décès par cancer se dissimulent sous les rubriques « causes inconnues » et « sénilité », ce nombre doit être assez faible en ce qui concerne les « causes inconnues » qui ne comprennent qu'un nombre de cas assez faible, mais il peut être assez considérable en ce qui concerne les décès par sénilité, qui figurent en nombre bien plus élevé que les décès dus au cancer. Il s'ensuit aussi, du moins pour l'Italie, que l'augmentation statistique du cancer ne peut pas être attribuée essentiellement à un accroissement des chiffres, dû au passage des décès par sénilité à la rubrique des décès par cancer, passage qui résulterait des progrès des moyens de diagnostic, car la mortalité par sénilité, loin de diminuer, a augmenté, du moins pendant une très longue période. Ou bien il faudrait admettre que l'augmentation de la mortalité par sénilité (mortalité qui dans plusieurs pays est en diminution) s'est vérifiée malgré une diminution continue des décès de cette rubrique qui se serait faite au bénéfice de la rubrique du cancer.

Toutes ces questions sont d'une étude et d'une solution extrêmement difficiles. Il faut néanmoins les prendre en considération en traitant de problèmes du genre de celui qui nous occupe ici.

III.

N'oublions pas, par contre — et l'on voit surgir ici une nouvelle complication — que, parmi les décès attribués au cancer, il doit y avoir un certain nombre d'erreurs de diagnostic. Nous savons, en effet, que si l'on contrôle le diagnostic *clinique* par l'autopsie ou l'examen histologique, on découvre parfois que le cancer dénoncé par l'examen clinique n'existait pas, surtout lorsqu'il s'agit de cancers inaccessibles.

En d'autres termes, les décès par cancer annoncés par les statistiques, s'ils doivent être augmentés d'un certain nombre de cas qui grossissent la rubrique de la sénilité, doivent être aussi diminués de ceux qui ont été indiqués à tort comme étant dus au cancer.

IV.

Ce n'est pas notre intention de traiter ici le sujet dont nous venons de parler, quoiqu'il soit d'une importance capitale dans l'étude de la répartition territoriale du cancer. Mais, tout simplement pour faire entrevoir, encore une fois, les applications que l'on pourrait tenter des idées que nous n'avons fait qu'effleurer, voici quelques chiffres et quelques réflexions au sujet de l'un des pays dont nous nous sommes occupés.

Examinons tout d'abord la co-variation entre la répartition territoriale du cancer et celle de la mortalité par sénilité.

Dans le tableau ci-après, le lecteur trouvera tout d'abord le taux de la mortalité par le cancer (pour 10.000 habitants de 40 ans et au-dessus) des 16 régions italiennes rangées par ordre croissant de mortalité; dans les autres colonnes, on trouvera les données pour le calcul de la mortalité par sénilité (pour 10.000 habitants de 60 ans et au-dessus). Arrêtons-nous aux deux groupes extrêmes. D'un côté les 4 régions dont la mortalité par le cancer est la plus basse: Sardaigne, Calabre, Pouilles, Basilicate; les taux de mortalité par sénilité y oscillent entre 144 et 183, c'est-à-dire qu'ils sont très élevés. D'autre part, les 4 régions à mortalité cancéreuse la plus forte; les taux de mortalité par sénilité y oscillent entre 82 et 105, c'est-à-dire qu'ils y sont très bas.

Mortalité par le cancer 1919-21 (p. 10.000 habit. de 40 ans et au-dessus) (Nombre de décès de 20 ans et au-dessus) (Par ordre croissant)	Décès par sénilité 1919-21		Population de 60 ans et au-dessus (1921)	Vie moyenne [1]	
	Nombre moyen	Taux par 10.000 habit. de 60 ans et au-dessus		à la naissance (Hommes)	à 60 ans (Hommes)
Sardaigne . . . 111	1.309	144	90.901	43,5	13,5
Calabre 117	2.887	173	167.121	43,6	14,8
Pouilles 117	3.698	146	253.838	39,2	14,3
Basilicate . . . 123	946	183	51.779	40,4	14,1
Sicile 128	7.708	172	448.815	40,0	14,3
Campanie . . . 138	6.218	158	391.825	43,6	14,3
Vénétie 140	4.182	70	595.089	47,8	14,2
Abruzzes . . . 140	2.827	179	158.348	45,7	15,0
Ombrie 210	1.163	150	77.549	47,4	14,5
Marches 218	1.918	151	126.893	47,0	14,1
Latium 227	1.173	68	171.422	44,0	13,1
Piémont. . . . 235	5.123	125	410.253	46,9	13,3
Ligurie 252	1.157	82	141.722	46,8	13,9
Lombardie. . . 284	4.977	89	561.396	42,5	12,3
Emilie. 313	3.346	105	318.037	46,1	13,4
Toscane 326	3.301	105	313.552	47,5	13,9

Calculons aussi le taux de mortalité par sénilité pour chacun des quatre groupes rangés par ordre croissant de mortalité, nous aurons :

Mortalité par sénilité, 157 pour le 1er groupe (mortalité par cancer la plus basse)
» » » 131 » » 2me »
» » » 119 » » 3me »
» » » 96 » » 4me » (mortalité par cancer la plus élevée).

Il y a vraiment lieu de soupçonner l'existence d'une corrélation inverse entre les chiffres de la répartition statistique du cancer et ceux de la répartition statistique de la mortalité par sénilité. *a*) S'agit-il simplement d'un phénomène qui est dû à une erreur de diagnostic et par là au grossissement des chiffres indiquant la sénilité, au détriment des chiffres qui devraient figurer sous la rubrique du cancer ? *b*) Ne se pourrait-il pas, par contre, que dans le cas où la mortalité infantile (et par conséquent la sélection de la première enfance) est plus forte, et la vie moyenne *à la naissance* est plus courte, les générations ainsi sélectionnées soient plus résistantes au cancer, et, que les vieillards de 60 ans et plus aient une longévité plus élevée, d'où le plus grand nombre de décès par sénilité parmi eux ? Les deux dernières colonnes de notre tableau indiquent pour chaque région la vie moyenne *à la naissance* et la vie moyenne à 60 ans, ou *longévité des vieillards*.

[1] Décès de la période 1901-1910 et recensements de 1901 et 1911.

Sans qu'il y ait corrélation parfaite entre les oscillations de ces valeurs et celles de la mortalité par cancer (loin de là) on peut observer que le groupe à mortalité cancéreuse la plus basse a aussi des indices très bas de vie moyenne à la naissance, entre 39,2 et 40,4, tandis que la vie moyenne monte à 42,5–47,5 dans le groupe à mortalité cancéreuse la plus élevée. La longévité des vieillards apparaîtrait un peu plus élevée dans les deux groupes de mortalité cancéreuse plus basse (et de sénilité plus élevée) que dans les autres. Mais il ne s'agit ici que de simples suppositions et de simples interprétations personnelles que nous sommes bien loin de regarder comme de véritables conclusions.

V.

Et maintenant, si nous voulions admettre que, quoiqu'il en soit, un certain nombre de décès par cancer se dissimulent sous la rubrique des décès par sénilité, nous pourrions nous efforcer de majorer, dans chaque région, le taux de mortalité par cancer, sans oublier que notre but consiste dans la comparaison des populations qui diffèrent les unes des autres par la race. Les divergences que nous avons déjà mises en relief entre les races continuent-elles à se manifester lorsqu'on opère sur des taux majorés ?

Mais à combien cette majoration doit-elle s'élever ? Il est bien arbitraire de supposer qu'un quart des décès par sénilité doive être ajouté aux décès par cancer pour rétablir la mortalité par cancer; néanmoins, voici le résultat, pour les zones italiennes, de l'application de ce coefficient.

Le tableau qui suit groupe les éléments nécessaires aux calculs en question, et il expose en même temps les résultats numériques de nos calculs.

Régions rangées par indice céphalique croissant (des dolichocéphales aux brachycéphales)	Décès p. cancer 1919-1921 (de tout âge) (Moyenne annuelle)	Décès p. cancer 1919-1921 (20 ans et au-dessus) (Moyenne annuelle)	Quart des décès par sénilité (1920)	Décès par cancer de tout âge, majorés d'un quart des décès par sénilité	Décès par cancer (20 ans et au-dessus) majorés d'un quart des décès par sénilité	Population 40 ans et au-dessus (1921)
Sardaigne	301	292	374	675	666	262.177
Calabre	563	553	686	1.249	1.239	469.578
Sicile	1.649	1.616	1.914	3.563	3.530	1.261.089
Pouilles	865	840	838	1.703	1.678	715.241
Basilicate	186	181	239	425	420	145.488
Latium	1.112	1.095	266	1.378	1.361	482.667
Abruzzes et Molise .	637	623	658	1.295	1.281	444.928
Campanie	1.549	1.516	1.391	2.940	2.907	1.101.139
Toscane	2.848	2.814	779	3.627	3.593	862.202
Ligurie	1.088	1.075	274	1.362	1.349	426.699
Marches	793	778	455	1.248	1.233	356.547
Ombrie	421	416	300	721	716	198.016
Lombardie	4.551	4.485	1.186	5.737	5.671	1.577.423
Vénétie	2.402	2.351	947	3.349	3.298	1.687.988
Emilie	2.803	2.766	756	3.559	3.522	884.193
Piémont	2.702	2.675	1.236	3.938	3.911	1.141.002

Les seize régions étant rangées par ordre d'indice céphalique croissant, le premier groupe représente assez bien l'*Homo mediterraneus*, et le dernier l'*Homo alpinus* (mélangé très probablement au *dinaricus*). On voit, avant tout, que dans chacune des régions dolichomorphes du midi (premier et deuxième groupe à l'exception du Latium qui fait partie du centre de l'Italie) le nombre absolu de décès par sénilité est bien supérieur à celui des décès par cancer: il suffit de remarquer qu'en Sardaigne, dans la Calabre, en Sicile, au Basilicate, etc., le quart des décès par sénilité atteint un nombre plus élevé que la totalité des décès par cancer. Ce sont là les zones où la mortalité par cancer, telle qu'elle résulte des statistiques, est très basse. Par contre, dans les régions du nord et du centre, c'est le nombre absolu des décès par cancer qui dépasse de beaucoup le quart des décès par sénilité: ce sont là les zones où la mortalité par cancer figure dans les statistiques comme étant la plus élevée.

Si, dans chaque région, on ajoute au nombre absolu des décès par cancer le quart des décès par sénilité, on aura les chiffres de la quatrième et de la cinquième colonne de notre tableau. Grâce à des chiffres ainsi majorés, les calculs des taux de mortalité pour l'ensemble de chacun des quatre groupes donnent les résultats suivants:

Taux de mortalité (majorée) par cancer pour 10.000 habitants âgés de 40 ans et au-dessus [1]	1er groupe	26,6	26,3
	2me »	27,7	27,4
	3me »	37,7	37,4
	4me »	31,3	31,0

à savoir que les dolichomorphes typiques du premier groupe ont une mortalité cancéreuse (majorée) de 27 environ (pour 10.000 habitants de 40 ans et plus) tandis que les brachymorphes typiques du dernier groupe, et ceux qui forment la majorité des populations du troisième groupe, donnent une mortalité de 31 et de 37.

La mortalité cancéreuse des dolichobruns apparaîtrait ainsi comme étant toujours moins élevée que celle des autres populations italiennes, mais qui oserait arriver à des conclusions fermes, étant donné le procédé de majoration nécessairement arbitraire, dont nous nous sommes servi ?

L'exemple, ou les exemples, que nous venons de donner, montrent assez bien les grandes difficultés que présentent des calculs de ce genre. Il y a lieu, cependant, de se demander si cela ne vaudrait pas la peine de les appliquer aux autres pays que notre rapport a examinés.

Dans ce cas, il faudrait étudier la possibilité de suivre, dans nos comparaisons entre le cancer et la race, l'une des méthodes suivantes:

a) S'efforcer de rectifier chaque taux régional de mortalité par cancer, grâce aux indications fournies par les pourcentages locaux des décès par cause inconnue et sénilité,

b) Ou se limiter, en vue des comparaisons entre la race et le cancer, dans chaque pays que notre rapport a examiné, aux zones, deux et trois, pour lesquelles les chances d'erreur dans la notation des décès par cancer sont réduites au minimum. Dans ce cas, il faudrait faire en sorte que, dans les zones en question, choisies dans les différents pays (Italie, France, Belgique, Pays Scandinaves) se trouvent des représentants de toutes les races, dont nous avons parlé: *Homo alpinus, dinaricus, europaeus, mediterraneus*, et que les groupements formés par chaque race puissent être comparés entre eux.

Mais, que de difficultés dans ce travail ! que d'hypothèses à admettre ! que d'arbitraire ! Sans compter que, si en suivant l'une ou l'autre de ces deux méthodes, ou en les

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[1] La première colonne indique les taux de mortalité obtenus d'après le nombre absolu (majoré) des décès par cancer à tous les âges; la deuxième colonne indique les taux de mortalité obtenus d'après le nombre absolu (majoré) des décès par cancer de 20 ans et au dessus.

appliquant l'une après l'autre, on résout la question du degré de confiance à accorder aux taux de mortalité par cancer, on n'évitera pas toujours la difficulté qui résulte de la modification de la répartition territoriale *réelle* par le « pouvoir d'attraction » des grands centres.

VI.

Voici maintenant quelques observations sur le point de vue duquel il convient d'étudier le rapport qui peut exister entre les caractères physiques et physiologiques des hommes et le cancer.

1. Lorsque nous nous demandons s'il existe un rapport quelconque entre la *race* et le *cancer* (ou toute autre cause de décès) nous nous demandons s'il existe un rapport entre certains caractères physiques et physiologiques des hommes et la maladie formant l'objet de nos recherches. Les caractères de race, en effet, ne sont que des caractères physiques et physiologiques tels que la taille, la forme du crâne, la pigmentation, etc. Et l'on sous-entend que chaque race présente un *milieu intérieur* spécial qui réagit, jusqu'à un certain point, aux excitations extérieures, d'une manière spéciale à chaque race.

Mais il y a bien d'autres caractères physiques et physiologiques que ceux qu'on a choisis comme critères de la race: le poids du corps, le thorax, la force, les proportions des différentes parties du corps, les différents « types » du sang, l'état et le fonctionnement des sécrétions internes, etc. Ne se pourrait-il pas que le rapport que nous cherchons en étudiant la race, entre certains caractères physiques et physiologiques et le cancer, soit à chercher plutôt parmi certains autres caractères physiques et physiologiques, qui ne sont pas pris en considération dans la description morphologique des races, que parmi les caractères de *race* que nous avons examinés ?

Par exemple, ne faudrait-il pas chercher du côté des caractères physiques et physiologiques qui donnent pour ainsi dire le signalement de la *constitution* ? Nous savons à ce propos qu'on peut classer les « constitutions » en catégories bien diverses les unes des autres (Sigaud, Mac-Auliffe, Viola, de Giovanni, Pende, Kretschmer, Bounak, etc.) [1]. Parmi les hommes, il peut s'en présenter qui ont des masses corporelles allongées (longilignes), trapues (brévilignes) ou qui se placent entre ces deux types antithétiques. Ces derniers sont des *normotypes*, les premières pouvant être considérées comme des *dolichotypes* et les deuxièmes comme des *brachytypes*. Ou bien encore, d'après Mac-Auliffe: type *plat* (correspondant au type longiligne ou microsplanchnique des italiens, et au type linéaire des américains) et type *rond* (bréviligne, megalosplanchnique, latéral). A ces deux types Mac-Auliffe en ajoute un autre: le type *cubique*. Ces trois types ne sont, toujours d'après Mac-Auliffe, que des formes oscillant autour des quatre types fondamentaux, *francs*, comme il dit: respiratoire, digestif, cérébral, musculaire [2]. L'importance d'une classification des hommes par rapport à la masse corporelle et à la morphologie de celle-ci, apparaît toujours davantage: pendant le tout récent examen des recrues américaines, C. B. Davenport n'a-t-il pas fait un classement morphologique de ses sujets en: très mince, mince, moyen, corpulent (ou gras), obèse ? [3]

Eh bien, ne serait-il donc pas utile de rechercher si le rapport entre les caractères physiques et physiologiques des hommes et le cancer ne doit pas être cherché en portant notre attention sur les différents types de constitution du genre de ceux dont nous venons de parler ?

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[1] N. Pende: *La biotipologia umana, scienza della individualità*, Palermo, 1924. Voir aussi les autres nombreux ouvrages de cet auteur, ainsi que les écrits, fondamentaux pour l'étude des constitutions, de Giacinto Viola.

[2] L. MacAuliffe: *Les tempéraments*, Paris, 1926.

[3] C. B. Davenport: *Body-build and its inheritance*, published by the Carnegie Inst. of Washington, Dec. 1923.

Il est vrai que chaque race, tout en présentant les divers types de constitution doit probablement affectionner particulièrement un type déterminé et que, par conséquent, tout en ne considérant dans les études de ce genre que les caractères de *race*, on étudie en même temps, quoique d'une façon indirecte, la *constitution* [1]. Mais il n'en est pas moins vrai qu'il vaudrait mieux procéder à cette étude directement, et ceci d'autant plus que nous ne savons pas encore *quels sont les types de constitution qui prédominent au sein de chaque race* [2]. Il nous faudrait donc une *statistique sur la répartition géographique des constitutions*. Il ne serait pas difficile d'y arriver avec l'aide des médecins militaires et en se servant (comme méthode de relevés statistiques) d'une sorte de relevé « représentatif », du genre de celui que les statisticiens connaissent sous le nom de méthode représentative de Kiaer. Nous demandons depuis longtemps qu'on fasse ou qu'on nous donne les moyens de faire cette enquête.

VII.

2. Le problème des rapports entre les caractères physiques et physiologiques et le cancer pourrait être envisagé d'un autre point de vue encore. Nous savons depuis quelques années que le sang de chaque individu possède des qualités caractéristiques individuelles spéciales à ses éléments, caractéristiques révélées par les méthodes et la technique de la sérologie. Or, ne pourrions-nous placer quelques espoirs, à propos d'une recherche sur les rapports pouvant exister entre les caractères physiques et physiologiques des hommes et le cancer, dans les études sérologiques ? C'est-à-dire, ne pourrions-nous pas soupçonner que le cancer préfère tel ou tel groupe sanguin, parmi les différents types sanguins dont la sérologie moderne nous parle, et que, d'ailleurs, les différents types sanguins ne sont pas également répartis dans chaque race ?

Nous disions, tout à l'heure, qu'il faudrait étudier simultanément les trois faits: cancer, race, constitution. Nous disons maintenant qu'il faudrait aussi étudier simultanément les trois faits: cancer, race, type sanguin.

On distingue, comme on sait, après les études de Landsteiner, de Jansky, etc., quatre groupes essentiels au point de vue du sang, tout sang humain appartenant à l'un ou l'autre de quatre groupes séparés et permanents, individualisés chacun par la manière dont le sang s'agglutine au contact d'un autre sang. Ces différentes manières sont indiquées dans le tableau suivant:

		Groupes de sérum				Termes donnés aux groupes
		I	II	III	IV	
Globules du groupe:	I	—	—	—	—	O
	II	+	—	+	—	A
	III	+	+	—	—	B
	IV	+	+	+	—	A B

[1] Voir G. Viola: *Razza e costituzione*, « Gazzetta degli ospedali e delle cliniche », page 34, 1924. Voir également K. O. Henckel: *Konstitutionstypen und europäische Rassen*, « Klinische Wochenschrift » 1925, page 45.

[2] Depuis quelques années déjà, MacAuliffe et Chaillou ont cru pouvoir estimer qu'en France, 47 % de la population appartient au type musculaire, 30 % au type respiratoire, 14 % au type digestif, 9 % au type cérébral; mais il s'agit, dans cette statistique, d'une *population* et non d'une *race* déterminée (Mac-Auliffe et Chaillou, *Morphologie médicale*, Paris, 1912, page 36.) Plus tard, dans son ouvrage sur les tempéraments déjà cité, MacAuliffe écrit que « les types *plats longilignes* français sont tous des dolichocéphales ou des sous-dolichocéphales » (page 148 en note). Voir aussi N. Pende: *Dalla medicina alla sociologia*, Palermo, 1921, qui esquisse une étude des différents types de constitutions qui prédominent dans telle ou telle *population* (page 36).

Il y a des individus (groupe I) dont les hématies ne sont agglutinables par aucun sérum (—) mais leur sérum agglutine (+) les globules des groupes II, III, IV. Par contre, dans le groupe IV, les globules sont agglutinés (+) par les sérums des groupes I, II, III, mais le sérum n'a pas de capacité d'agglutination (—). Les groupes II et III s'agglutinent réciproquement, etc. (voir le tableau). En d'autres termes, les globules (voir toujours le tableau) du premier groupe ne sont pas agglutinables par le sérum d'aucun autre groupe; les globules du deuxième groupe sont agglutinables par le sérum du premier et du troisième groupe; ceux du troisième groupe sont agglutinables par le sérum du premier et du deuxième groupe; enfin ceux du quatrième groupe sont agglutinables par le sérum des trois autres groupes. Le premier groupe a été nommé O, le deuxième A le troisième B, le quatrième AB.

Chez les Roumains de Transylvanie, par exemple (à remarquer que cette indication ne concerne pas une *race*, mais un *peuple*), on aurait trouvé, sur 2.372 sujets, 7,97 % représentant le groupe AB, 40,93 % le groupe A, 14,54 % le groupe B, 36,55 % le groupe O[1]. L'indice biochimique serait donné par $I = \frac{A + AB}{B + AB}$. Dans le cas des Roumains, cité ci-dessus, par $\frac{48,90}{22,51} = 2,17$.

La question se pose de savoir si les différents groupes sanguins ont des préférences pour telle ou telle maladie (et, par conséquent, s'il y a préférence de la part d'un groupe déterminé pour le cancer); et il s'agit aussi de savoir si dans chaque race on trouve, de préférence, tel ou tel groupe sanguin. Pour répondre à cette dernière question, il ne suffit pas de montrer que le groupe A prédomine parmi les individus de l'Europe centrale et septentrionale (plus de 40 %), que ce pourcentage diminue pour les habitants de l'est et du sud de l'Europe et que c'est le contraire que l'on constate pour le groupe B (Hirszfeld). Les individus de l'Europe centrale et septentrionale, en effet, ne constituent pas une *race*, mais des *peuples*, et l'on peut en dire autant des individus de l'Europe orientale et de l'Europe méridionale.

D'ailleurs, quand on exprime la répartition géographique de l'indice, $I = \frac{A + AB}{B + AB}$ telle qu'on l'a obtenue dans les nombreux travaux dont la science s'est enrichie jusqu'à aujourd'hui (L. Lattes), nous ne voyons pas qu'on puisse faire correspondre dès maintenant la fréquence d'un groupe sanguin déterminé avec telle ou telle race. L'indice biochimique le plus élevé a été constaté chez les individus originaires de l'Angleterre, des Pays Scandinaves, des Etats-Unis d'Amérique (3,5; 4,5) et de la France (3,9); il était légèrement inférieur pour les divers groupes correspondant aux différentes parties de l'Allemagne (2,8), de l'Italie (3,0) et de la Bulgarie (2,5). Chez les Russes, les Polonais et les Juifs des Balkans et de la Pologne, chez les Hongrois, l'indice oscille entre 1,4, 1,5 et 1,9; tandis que chez les indigènes du nord de l'Afrique l'indice va de 0,8 à 1,5. En Extrême-Orient, les Japonais présentent un indice de 1,7, les Chinois de 1,0. On a trouvé chez les nomades (bohémiens) de Hongrie, un indice de 0,6. Le groupe sans agglutinogène a été retrouvé dans une proportion de 77,7 parmi les Indiens, de 64,7 parmi les Philippins et de 53,7 parmi les habitants de la Mélanésie.

D'après J. Mydlarski de Varsovie, d'autre part, le groupe A correspondrait aux types anthropologiques *Homo nordicus, alpinus, dinaricus*; le sang B aux types anthropologiques *Homo orientalis* et « race » subnordique. Quant au sang O, les données ne seraient

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[1] G. Popoviciu: *Recherches sérologiques sur les races en Roumanie*, « Revue anthropologique », Paris, avril-juin 1925.

pas suffisamment claires pour pouvoir formuler quelques hypothèses vraisemblables[1]. Ces conclusions — si elles méritent ce nom — nous laissent rêveurs, car on ne voit pas bien comment «des races» que les anthropologistes estiment très diverses entre elles comme l'*Homo nordicus* et l'*Homo alpinus*, viennent ici se classer sous la même rubrique[2].

De même on a déjà essayé de découvrir s'il existe une corrélation entre la fréquence d'un groupe sanguin déterminé et la diphtérie (Hirszfeld et Brockmann) ou la syphilis (Amsel et Halber, Straszynski) ou d'autres maladies. Il ne serait donc pas, peut-être, inutile de poursuivre cette exploration en ce qui concerne le cancer, ainsi du reste, qu'on a déjà commencé à le faire (par exemple, le Dr H. Pluss, de Zurich, pour le cancer et la tuberculose). Les remarquables recherches de L. Hirszfeld doivent être aussi rappelées à ce propos. Mais nous ne sommes là qu'au commencement d'une série de recherches et nous ne pouvons en voir, même de loin, la fin.

Néanmoins, il est hors de doute qu'il est utile de continuer à progresser dans cette direction en posant nettement le problème, en perfectionnant les méthodes, en élargissant le nombre des observations et surtout en conduisant les recherches de façon à ce que chaque examen sérologique soit effectué non pas sur des *peuples*, mais sur des groupes homogènes quant à la *race*.

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[1] J. Mydlarski: *La différenciation du sang corrélative aux races humaines*, dans les Comptes rendus de la IIme session de l'Institut international d'anthropologie (Prague), Paris, 1926, page 189.

[2] A rappeler aussi les recherches de W. Klein et Osthoff sur les enfants de la ville de Herne en Allemagne; les dolichocéphales (indice céphalique inférieur à 76) ont donné un indice biochimique de 4,2; les misocéphales (indice céphalique de 76,0 à 80,9) ont donné un indice biochimique de 2,9 et les brachycéphales (indice céphalique de 81,0 et plus) ont donné un indice biochimique de 2,4.

Considérations sur les rapports présumés entre la race et le cancer, d'après l'étude des statistiques anthropologiques et médicales de quelques pays d'Europe.

Deuxième partie.

ÉTUDE PRÉLIMINAIRE COMPARATIVE SUR LA RÉPARTITION DES RACES ET DES TAUX DE MORTALITÉ PAR CANCER EN FRANCE, EN SUISSE, DANS LES PAYS SCANDINAVES ET DANS LES ILES BRITANNIQUES

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Deuxième Partie.

I. ÉTUDE PRÉLIMINAIRE COMPARATIVE SUR LA RÉPARTITION DES RACES ET DES TAUX DE LA MORTALITÉ PAR CANCER EN FRANCE

Par le professeur Eugène PITTARD.

1. QUELQUES MOTS SUR LES ORIGINES DES POPULATIONS FRANÇAISES.

Dans une étude comme celle-ci, qui n'est pas une recherche détaillée d'anthropologie, pour laquelle nous n'avons, naturellement, à envisager que les caractères ethnologiques généraux d'un pays, les multiples détails ethniques dont s'orne le complexe humain qu'est la France, ne devront pas être retenus. Sauf, cependant, s'ils peuvent servir à éclairer des faits exceptionnels qui, sans eux, ne pourraient être l'objet d'aucune interprétation raisonnable.

Et c'est alors la répartition géographique des taux de la mortalité cancéreuse qui dirigera, s'il y a lieu, cette recherche des détails.

* * *

Considérée dans ses grands traits, la France apparaît aux yeux des moins informés d'anthropologie, comme un lieu de cohabitation de plusieurs races. Il suffit, pour imaginer cet état, de se rappeler un peu l'histoire de ce coin de terre, l'un des plus favorisés qui aient été et qui soient encore pour retenir les hommes. Les populations préhistoriques parcoururent son sol dès les premiers temps du quaternaire. Et s'il est certain que plusieurs groupes ethniques ont disparu, il est non moins certain que d'autres de ces groupes ont survécu, se sont multipliés et que leurs descendants peuplent encore diverses parties de la France.

Laissons-les pour le moment et rapprochons-nous des temps actuels. Les premières invasions importantes pénétrèrent en France par le nord et par l'est, c'est-à-dire par les territoires en contiguïté avec la partie géographique la plus étendue de l'Europe. Les invasions par la mer ne furent jamais bien nombreuses. Navigateurs ou commerçants, ces étrangers qui venaient par l'Atlantique ou la Méditerranée touchaient le sol français pour y faire des échanges; ils créaient des comptoirs, mais ils n'installèrent jamais de véritables colonies: les Phéniciens, les Carthaginois, les Grecs, entre autres.

Ceux-là datent des périodes historiques. Auparavant, leurs prédécesseurs, sous des appellations qui ne nous ont pas été conservées, furent, sans doute, dès le néolithique avancé, les premiers navigateurs côtiers. Mais ils n'ont pas laissé de traces ethniques.

A peu près au même moment, la France était abordée à ses frontières nord-orientales par les prédécesseurs des invasions historiques. Les premières bandes de la race nordique commencèrent leurs migrations. Nous retrouvons les sépultures de ces conquérants, que Hamy a appelés « Dolichocéphales néolithiques d'origine septentrionale ». Ceux-là s'installèrent solidement sur les territoires français. Ils devinrent des sédentaires, agriculteurs

et pasteurs, et, vraisemblablement, ne quittèrent plus jamais le pays. Sur cette route tracée par les Néolithiques septentrionaux s'avancèrent, à bien des reprises, au cours des âges, jusque — et surtout — dans les premiers siècles de notre ère, de nouveaux flots d'émigrants arrivant de la même source ethnique.

Un peu plus tôt, semble-t-il, les massifs montagneux français — d'abord celui des Alpes — étaient atteints par des populations dont l'origine géographique est encore inconnue et qui, franchissant les cols, se répandirent sur une grande partie du patrimoine actuel de la France. Ces Brachycéphales néolithiques, venus peut-être d'Asie, paraissent avoir abordé la voie danubienne par la Russie du sud. Ils remontèrent la route que descendait le fleuve. Arrivés devant la barrière de la Styrie et de la Basse-Autriche, ils scindèrent leurs troupes: les unes passèrent au nord, peuplant une partie de l'ancien empire des Habsbourg, l'Allemagne du Sud, la Suisse; les autres passèrent au sud: les populations actuelles de la Haute-Italie et des Alpes françaises sont en grande partie leurs descendants.

Ces immigrants brachycéphales traversèrent les passages montagneux de la Suisse et de la France aussi bien à l'âge de la pierre polie qu'à l'âge du bronze. Presque tous les cols alpins ont fourni à l'archéologie des documents positifs. De la frontière italienne à l'extrémité orientale du plateau central — au moins — nous retrouvons aujourd'hui les descendants de ces Brachycéphales sous des étiquettes provinciales diverses. Ainsi, dès le Néolithique, les territoires, toujours convoités, qui composent la France, servaient déjà d'asile à deux races d'envahisseurs — dont nous connaissons assez bien les dates relatives des immigrations. Elles feront toutes deux souches vivantes. Et l'on peut dire que si, à ce moment-là, s'étaient closes définitivement les ères des invasions, la physionomie ethnique de la France n'aurait pas été différente de ce qu'elle est devenue depuis.

Mais arrivons aux périodes historiques.

Malgré toutes les brumes qui enveloppent les récits des auteurs de l'antiquité, il apparaît, comme hors de discussion, que de nombreuses tribus d'origine germanique envahirent, à diverses reprises, les territoires de la Gaule; les unes la traversèrent pour courir à d'autres destinées. Plusieurs subirent de telles vicissitudes qu'elles semblent avoir disparu; quelques-unes prospérèrent jusqu'à nos jours. Modifiant leur langue, la plupart de leurs coutumes, leur état politique, elles s'incorporèrent graduellement au corps national de la France.

Mais ces populations qui transformaient ainsi leurs caractères ethnographiques et linguistiques ne modifiaient pas, tant qu'elles ne subissaient pas des mélanges avec des voisins provenant d'autres races, leurs caractères anthropologiques.

Et aujourd'hui, après 2000 ans, nous pouvons discerner, dans l'ensemble du peuple français, les descendants des immigrants venus du nord.

D'abord, sous le nom de Galates et de Gaulois, ces hommes de haute stature, à peau blanche lactée, aux cheveux blonds, aux yeux bleus, combattent ardemment les Romains.

L'historien Polybe parle d'eux constamment. Mais il s'occupe surtout des Galates qui habitent en dehors du territoire français: « La crainte des Galates a plus d'une fois ému non seulement la Grèce de nos jours, mais encore la Grèce ancienne ».

Pour ceux qui sont en France, on peut consulter César qui, dans ses « Commentaires » s'exprime ainsi: « L'ensemble de la Gaule se divise en trois parties: l'une est habitée par les Belges, l'autre par les Aquitains, la troisième par ceux, qui dans leur langue, s'appellent Celtes et que nous appelons Gaulois » [1].

---

[1] Pour un anthropologiste, ces termes différents signalent des groupes appartenant à la même race, en l'espèce la race kymrique ou nordique.

Au commencement de l'ère chrétienne, des bandes considérables de Barbares se précipitèrent sur la France. Ils venaient aussi du nord de l'Europe. La première de ces invasions est celle des Cimbres et des Teutons; ces derniers, alliés à une partie des populations suisses d'alors.

* * *

Est-il possible de discerner, chez les habitants actuels de la France, ceux qui doivent être considérés comme descendants des anciennes populations nordiques *(Homo europaeus)* ou germaniques, arrivées au cours des âges sous les noms que les historiens nous ont conservés ? Aucun doute n'est possible sur ce point, car nous avons des moyens de comparaison.

Tous les auteurs anciens, historiens et géographes nous ont laissé une description physique de ces barbares nordiques; stature, couleur de la peau, des yeux et des cheveux. Et ce sont toujours exactement les mêmes traits qui sont consignés dans leurs écrits. Il ne manque à cette physionomie ethnique, comme autres caractères principaux, que la forme cranienne. Celle-là, nous pouvons l'ajouter pour compléter la diagnose. Car nous la connaissons, grâce aux squelettes trouvés dans les sépultures de la France septentrionale envahie par ces populations nordiques, dès l'âge de la pierre polie. Ces squelettes montrent, au cours des âges, une concordance des caractères morphologiques qu'on ne saurait trop souligner.

Evidemment, nous ne devons pas nous attendre à rencontrer au XX^{e} siècle, sur le sol de la France, des races nordiques pures, dans les territoires jadis occupés par les invasions germaniques. Les mélanges des populations, à partir surtout de l'établissement de l'empire romain, n'ont cessé d'avoir lieu. Peut-être même les bandes galates, qui s'avançaient vers la France, entraînaient-elles déjà des groupes ethniques d'autres origines qu'elles-mêmes.

Pour savoir à quoi s'en tenir, pour dresser l'inventaire des races de la France aux diverses époques de son histoire, c'est-à-dire pour brosser un tableau montrant les répartitions ethniques actuelles, il faut faire appel aux enquêtes anthropologiques. Seules, celles-là pourront déceler la présence, en tel ou tel endroit, de tel ou tel type ethnique.

Si ce que nous pensons des immigrants kymriques ou nordiques est justifié, les enquêtes anthropologiques sur la population vivante de certaines régions doivent nous montrer un pourcentage relativement élevé d'individus de haute stature, dolichocéphales et blonds, aux yeux clairs.

Et si nous pensons aux envahisseurs — qui semblent avoir arrêté leurs mouvements à l'âge du bronze — dont les représentants deviendront la race celtique de Broca *(Homo alpinus)*, nous devrons rencontrer, sur les territoires où nous les cantonnons, un pourcentage élevé de population ayant une taille moyenne, un crâne arrondi, des yeux et des cheveux bruns. Alors, ces enquêtes anthropologiques ayant délimité sur la carte la répartition des divers types ethniques, nous pourrons comparer avec les cartes historiques signalant en France, par exemple, les établissements de populations germaniques et voir s'il y a entre elles des concordances.

* * *

D'abord, examinons rapidement la carte historique.

Gustave Lagneau [1] a passé une partie de sa vie à rechercher le cheminement et la fixation des tribus germaniques sur le sol de la France. Il a dressé au mieux des réalités historiques, d'après de très nombreux documents, cette répartition géographique.

---

1 Gustave Lagneau, *Anthropologie de la France*, « Dictionnaire encyclopédique des sciences médicales », Paris, 1879.

Tous les départements du nord, un certain nombre de ceux de l'est, ont été occupés par des immigrants de cette origine qui se sont appelés Galates, Cimbres, Belges, Franks, Burgondes, Saxons, Nordmans. « Le long de la Manche, à l'occident de la Seine, se retrouvent encore aujourd'hui des descendants des pirates saxons chez les Baïocasses, anciens habitants des environs de Bayeux, et de nombreux Scandinaves ou Nordmans, dans la partie de la Neustrie depuis appelée Normandie. » De la Normandie à la Basse-Loire et au Poitou, on doit retrouver les traces de certaines tribus galates et belges qui paraissent s'être avancées jusqu'à la Loire et jusqu'à l'Océan; plus tard, des pirates saxons et normands se seraient d'ailleurs fixés également auprès de l'embouchure de la Loire.

D'autre part, divers départements de la France orientale, malgré que les statistiques anthropologiques ne le révèlent pas avec netteté — sans doute parce qu'elles sont encore insuffisantes — renferment certainement les descendants des nombreux immigrants de race germanique qui occupèrent successivement cette région. Parlant d'une carte qu'il a dressée, Lagneau écrit: « Du nord au sud, en remontant le bassin de la Seine et descendant ceux de la Saône et du Rhône, les immigrants galates-belges se trouvent rappelés par quelques petits traits disséminés au milieu du ponctué général représentant la population celtique antérieure; ces immigrants galates-belges se portèrent soit dans le midi des Gaules, soit par les passages des Alpes, dans la Haute-Italie. Entre la Loire et l'Allier, au milieu des populations celtiques du centre de la France, se montre, en clair, le territoire concédé aux Boïens par César, sur la demande des Eduens. Ces Boïens, qui avaient envahi les Gaules avec les Helvètes, étaient frères des Boïens qui ont laissé leur nom à la Bohême (Boiohemun) et des Boïens résiniers qui, au sud-ouest de la Garonne et des Bituriges vivisques des environs de Burdigala, Bordeaux, voisins des Aquitains, étaient fixés sur le bord de l'Océan, dans les environs du bassin d'Arcachon. Enfin, sur les bords de la Haute-Garonne et aussi sur le littoral méditerranéen, s'étendant des Pyrénées-Orientales au Rhône, sont également indiqués, au milieu des populations soit celtiques, soit surtout ibéro-ligures de ces régions par de petits traits disséminés, quelques immigrants de race germanique; en effet, d'une part, on a cru devoir rattacher aux Belges les Volces des environs de Toulouse, de Carcassonne et de Nîmes; d'autre part, on sait que les Visigoths, après la défaite de Vouillé, se retirèrent principalement dans la Septimanie, c'est-à-dire dans cette partie du littoral méditerranéen. » Voilà ce que, dans les grandes lignes, indique l'histoire.

Si nous admettons que tous ces noms de tribus sont des étiquettes appliquées sur des groupes de race germanique [1], il ne nous reste plus qu'à savoir si ce sont encore les descendants de ces groupes qui peuplent les départements français jadis envahis. Les pages suivantes répondront à une telle question.

Ou plutôt elles essayeront de répondre, car les enquêtes anthropologiques en France n'ont pas porté, sur tous les départements, la même attention. Certains d'entre eux connaissent des richesses d'informations que d'autres départements ignorent complètement. Tout n'est pas dit, loin de là, sur les caractères anthropologiques des populations françaises. Un grand nombre d'analyses sont encore nécessaires pour qu'on puisse dresser les cartes ethnologiques définitives de ce pays, l'un des plus intéressants qui soient. Néanmoins, ce qui a été réalisé est de nature à nous éclairer sur bien des points.

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[1] Il est possible que plusieurs tribus, plusieurs groupements, considérés par les historiens comme de souche germanique, aient été, en réalité, d'une autre origine. Ces groupements pouvaient être linguistiquement, politiquement, germaniques; ils ne l'étaient pas ethniquement. J'ai essayé de discuter ce point à propos des Alamans en Suisse: Eug. Pittard, *Crania Helvetica, Les crânes valaisans de la Vallée du Rhône*, Genève et Paris, 1910.

2. La répartition géographique du cancer en France.

Avant de procéder à des essais de comparaisons entre le cancer et la race, il faut prendre connaissance de la répartition géographique du cancer en France. Voici (tableau N° 1) cette répartition selon les 86 départements français. Le taux de mortalité a été calculé, chez les individus âgés de 40 ans et au-dessus, pendant la période 1911-1913. Un simple coup d'œil sur la troisième colonne de ce tableau montre de très grandes variations départementales: minimum 3,09, pour 10.000 habitants dans la Lozère; maximum 38,33, dans la Seine-Inférieure. Ce sont là deux régions géographiques très éloignées l'une de l'autre, que nous savons peuplées l'une et l'autre par des individus de races différentes. Mais ces raisons ethniques sont-elles les seules raisons explicatives de ces taux si dissemblables ?

Si, avant de dresser des cartes ou des tableaux systématiques, on se remémore la position des départements français sur la carte, on s'aperçoit assez vite, en poursuivant ce coup d'œil superficiel dans l'espace, que les taux maxima de mortalité par cancer appartiennent presque tous aux départements septentrionaux. Est-ce là une coïncidence ? Cette répartition provient-elle de statistiques mieux établies dans ces départements ? Verrions-nous si vite apparaître, dans une région que l'histoire nous montre peuplée par une majorité d'individus de race nordique, une influence raciale des taux de mortalité cancéreuse ?

Il faut, pour répondre à ces questions, disséquer avec quelques détails ces documents.

Tableau N° 1.

Répartition géographique de la mortalité par cancer et autres tumeurs malignes en France

(Par département).

Chez les individus de 40 ans et au-dessus, pendant la période 1911-1913.

Départements	Totaux 40 et au-dessus 1911–1913	Moyenne 40 et au-dessus 1911–1913	Taux 1911–1913 p. 10.000	Population R. 1911 40 et au-dessus
Ain	750	250	19,39	128.407
Aisne	1.911	637	33,15	192.153
Allier	864	288	18,11	159.054
Alpes (Basses)	154	51,3	12,2	42.148
Alpes (Hautes)	73	24,3	7,15	33.990
Alpes-Maritimes	747	249	20,65	120.584
Ardèche	467	156,3	12,99	120.305
Ardennes	811	270,3	22,69	119.122
Ariège	162	54	6,66	81.024
Aube	710	236,6	23,54	100.527
Aude	417	139	11,35	122.415
Aveyron	197	65,6	4,81	136.367
Bouches-du-Rhône	1.430	476,6	17,87	266.673
Calvados	1.201	400,3	26,58	150.970
Cantal	242	80,6	10,05	80.189
Charente	321	107	7,92	135.126
Charente-Inférieure	860	286,6	15,68	184.029
Cher	826	275,3	21,06	130.723
Corrèze	407	135,6	12,73	106.499
Corse	239	79,6	8,24	96.657
Côte-d'Or	1.102	367,3	25,30	145.166
Côtes-du-Nord	574	191,3	10,03	190.690
Creuse	321	107	10,61	100.802
Dordogne	396	132	7,80	169.265
Doubs	639	213	21,66	98.345

Tableau N° I *(suite).*

RÉPARTITION GÉOGRAPHIQUE DE LA MORTALITÉ PAR CANCER ET AUTRES TUMEURS MALIGNES EN FRANCE
(Par département).

Chez les individus de 40 ans et au-dessus, pendant la période 1911-1913.

DÉPARTEMENTS	Totaux 40 et au-dessus 1911–1913	Moyenne 40 et au-dessus 1911–1913	Taux 1911–1913 p. 10.000	Population R. 1911 40 et au-dessus
Drôme	577	192,3	16,80	114.441
Eure	927	309	24,63	125.472
Eure et-Loir	998	332,6	32,67	101.819
Finistère	1.171	390,3	17,42	224.052
Gard	493	164,3	10,78	152.480
Garonne (Haute)	602	200,6	10,90	183.974
Gers	279	93	9,03	103.000
Gironde	1.715	571,6	17,57	325.315
Hérault	627	209	11,31	184.860
Ille-et-Vilaine	961	320,3	15,99	200.253
Indre	629	209,6	19,40	108.044
Indre-et-Loire	968	322.6	23,82	135.436
Isère	1.433	477,6	22,95	208.080
Jura	377	125,6	13,46	93.345
Landes	358	119,3	11,05	107.930
Loir-et-Cher	971	323,6	31,45	102.900
Loire	1.852	627,3	27,76	225.945
Loire (Haute)	355	118,3	11,15	106.139
Loire (Inférieure)	1.540	513,3	21,28	241.222
Loiret	1.242	414	29,83	138.786
Lot	196	65,3	7,00	93.247
Lot-et-Garonne	386	128,6	10,55	121.952
Lozère	38	12,6	3,09	40.785
Maine-et-Loire	1.201	400,3	19,50	205.231
Manche	837	279	16,94	164.721
Marne	1.510	503,3	32,16	156.508
Marne (Haute)	332	110,6	12,58	87.911
Mayenne	726	242	23,00	105.196
Meurthe-et-Moselle	1.174	391,3	23,40	167.207
Meuse	672	224	23,12	96.900
Morbihan	550	183,3	10,44	175.449
Nièvre	684	228	18,89	120.687
Nord	5.713	1.904,3	31,48	604.942
Oise	1.408	469,3	30,97	151.528
Orne	754	251,3	20,56	122.229
Pas-de-Calais	2.453	817,6	27,57	296.592
Puy-de-Dôme	927	309	14,74	209.635
Pyrénées (Basses)	744	248	16,30	152.182
Pyrénées (Hautes)	231	77	9,35	82.337
Pyrénées-Orientales	304	101,3	13,56	74.722
Rhin (Haut)	135	45	15,82	28.447
Rhône	3.419	1.139,6	35,39	321.948
Saône (Haute)	308	102,6	10,19	100.732
Saône-et-Loire	1.388	462,6	21,02	220.082
Sarthe	1.204	401,3	25,44	157.758
Savoie	309	103	11,87	86.792
Savoie (Haute)	342	114	13,05	87.377
Seine	13.555	4.518,3	34,54	1.308.218
Seine-Inférieure	3.174	1.058	38,33	276.015
Seine-et-Marne	1.193	397,6	29,05	136.848
Seine-et-Oise	2.673	891	31,40	283.751
Sèvres (Deux)	576	192	14,94	128.520

Tableau N° I *(suite)*.

RÉPARTITION GÉOGRAPHIQUE DE LA MORTALITÉ PAR CANCER ET AUTRES TUMEURS MALIGNES EN FRANCE

(Par département).

Chez les individus de 40 ans et au-dessus, pendant la période 1911-1913.

DÉPARTEMENTS	Totaux 40 et au-dessus 1911-1913	Moyenne 40 et au-dessus 1911-1913	Taux 1911-1913 p. 10.000	Population R. 1911 40 et au-dessus
Somme	2.254	751,3	37,27	201.588
Tarn	288	96	7,43	129.199
Tarn-et-Garonne	158	52,6	6,48	81.162
Var	515	171,6	13,86	123.807
Vaucluse	466	155,3	16,31	95.206
Vendée	1.260	420	26,86	156.355
Vienne	537	179	13,90	128.799
Vienne (Haute)	549	183	14,61	125.293
Vosges	731	243,6	17,27	141.061
Yonne	833	277,6	20,63	134.570

Et d'abord, quelle est la valeur du matériel que nous utilisons ?

Il est bien certain qu'examinée exclusivement du point de vue quantitatif, aucune statistique, dans aucun pays, ne peut être considérée comme totalement exacte, même dans les Etats dont les statistiques passent, comme celles de la Suisse et à juste titre, pour être les meilleures. Il en sera de même pour les enquêtes relatives aux taux de mortalité par cancer. Il y a, pour qu'il en soit ainsi, entre autres raisons, une raison primordiale: beaucoup de cancéreux meurent d'une autre maladie que du cancer même.

Dans les statistiques qui reflètent les plus grands soucis d'exactitude, de tels cas — maladies à issues fatales rapides greffées sur un organisme cancéreux — figurent dans des catégories qui ne sont pas celles du cancer. La mortalité réelle du cancer en est donc artificiellement diminuée.

D'autre part, beaucoup d'individus morts par suite d'un cancer ne sont pas, à cause du secret médical ou simplement à cause de négligence administrative, inscrits dans la liste des cancéreux. Et la mortalité par cancer est là encore artificiellement diminuée.

Si cette constatation nous amène à penser que le cancer est beaucoup plus abondant qu'on ne le croit, est-elle de nature à troubler nos observations comparatives ? Notamment lorsque celles-ci sont faites dans une même région ? J'ai posé la question à des statisticiens de divers pays. Ils m'ont répondu que dans l'Etat dont ils étaient les porte-paroles, les divisions administratives, du point de vue qui nous occupe, étaient comparables entre elles. C'est la chose qui nous intéresse principalement pour le moment.

Une autre réserve s'impose. Les nombreux services hospitaliers des grandes villes, les centres anticancéreux doivent augmenter artificiellement la quantité des cancéreux du département, du comté, de la province dans lesquels les décès sont recensés. Une telle idée se présente aussitôt dans les préoccupations d'un statisticien biologiste. Pour une agglomération humaine numériquement faible, un tel facteur doit jouer un rôle efficient. J'habite une ville-frontière, capitale d'un petit canton, dont l'hôpital principal, plutôt considérable, reçoit en assez grand nombre des malades étrangers à ce canton. Les malades qui meurent dans cet hôpital augmentent artificiellement les taux réels de mortalité de Genève. Un tel inconvénient disparaîtra le jour où, dans tous les pays, on aura pris l'habitude d'inscrire dans les fiches de décès le domicile réel du malade décédé. Plus tard, on pourra aller plus loin.

Pour pénétrer l'étiologie du cancer, des statistiques sont désirables qui enregistreront soigneusement, non seulement les lieux d'élection du cancer dans le corps — ce qui se fait déjà en bien des pays — mais avec plus de détails encore que ce n'est le cas, et le feront selon l'âge, le sexe et la race. Une mise en série de tous ces éléments aidera certainement à voir plus clair.

Mais l'erreur de statistique consistant à enfler artificiellement le chiffre d'une circonscription administrative est-elle aussi grave qu'on l'imagine communément ?

Je vais prendre en France quelques exemples de départements qui renferment des grandes villes: la Seine (Paris); le Rhône (Lyon); les Bouches-du-Rhône (Marseille); la Gironde (Bordeaux); le Nord (Lille). Ces villes sont en même temps des centres hospitaliers importants. Les chiffres de la mortalité cancéreuse que j'ai en ce moment-ci sous les yeux donnent par 10.000 habitants (1911-1913) les résultats suivants: Seine, 34,54; Rhône, 35,39; Bouches-du-Rhône, 17,87; Gironde, 17,57; Nord, 31,48.

Les chiffres, à peu près égaux, des départements de la Seine et du Rhône sont très différents de ceux fournis par les départements des Bouches-du-Rhône et de la Gironde. Mais sait-on que les chiffres très élevés fournis par Paris et Lyon sont dépassés par les chiffres des départements dont les services hospitaliers ne sont pas comparables, quantitativement, à ceux de ces deux grandes villes ? La mortalité par cancer dans la Seine-Inférieure est de 38,33; elle est de 37,27 dans la Somme. Et les départements qui possèdent, après Paris et Lyon, les chiffres les plus hauts, sont l'Aisne (33,15), l'Eure-et-Loir (32,67) et la Marne (32,16).

Les statistiques élevées fournies par les grands centres hospitaliers, au lieu d'être une objection à mon hypothèse, la renforcent singulièrement, suivant les cas; par exemple, quand je vois Paris, où les statistiques, j'imagine, doivent être parmi les plus sérieuses, fournir à la mortalité cancéreuse un chiffre moins élevé que celui de la Seine-Inférieure, ou de la Somme. Ce qui m'étonne, c'est que le département du Rhône, c'est-à-dire Lyon, n'ait pas un chiffre de mortalité par cancer plus élevé encore que celui qu'il inscrit dans les tableaux que j'ai sous les yeux. C'est parce que les conditions de la statistique — interprétées selon le facteur race — ne sont pas les mêmes à Lyon qu'à Paris. Pourquoi les 600.000 habitants de Marseille n'élèvent-ils pas davantage le chiffre de la mortalité cancéreuse des Bouches-du-Rhône ? Serait-ce que les médecins d'hôpitaux et les médecins particuliers de cette ville ont moins de conscience à la besogne, moins de scrupules scientifiques? — où qu'ils sont davantage retenus par le secret médical que leurs confrères de Paris et de Lyon ? Et pourquoi le chiffre des Bouches-du-Rhône ne dépasse-t-il pas considérablement ceux des départements voisins, le Var (13,88), le Gard (10,78), l'Hérault (11,31) ? Pourquoi dans le Var la ville de Toulon, et dans l'Hérault, celle de Montpellier — centres hospitaliers importants — n'élèvent-ils pas davantage les taux de mortalité respectifs des départements dont ils sont les villes principales ?

Il serait facile de multiplier de telles comparaisons, mais je n'en veux pas abuser [1].

D'autre part, puisqu'on nous dit que le matériel imparfait que nous utilisons est, dans bien des cas, un matériel comparable, c'est là, pour nous, l'essentiel. Nous serions évidemment plus heureux si ces documents ne pouvaient être l'objet d'aucune réserve. Mais nous n'y pouvons rien. Tels qu'ils sont, ils nous permettent des comparaisons dont nous avons, à l'intérieur d'un pays, à retirer tous profits.

Encore un mot sur ce sujet.

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[1] Depuis que ces lignes ont été écrites, une enquête plus approfondie en France nous a convaincu que certains départements offrent à la statistique médicale des documents nettement insuffisants. Ces départements étant mis à part, il reste néanmoins en France plusieurs régions dont la comparabilité est suffisante pour que, dans une recherche préliminaire telle que celle qui figure ici, nous les opposions les unes aux autres.

Les centres hospitaliers importants attirent les malades de très loin à la ronde. Ce fait est bien établi. Je me demande alors pourquoi Paris n'indique pas un chiffre de mortalité cancéreuse plus élevé ? Je prends dans ma carte de la répartition du cancer en France les départements qui entourent le département de la Seine et celui de Seine-et-Oise, et je trouve chez eux les proportions suivantes de mortalité (toujours par 10.000 habitants) : Seine-et-Oise 31,4 ; Seine-et-Marne 29,05 ; Aisne 33,15 ; Oise 30,97 ; Eure 24,63 ; Eure-et-Loir 32,67 ; Loiret 29,83.

Si les hôpitaux de Paris ont une action tentaculaire indéniable sur les malades cancéreux des départements voisins, quel serait alors le taux réel de mortalité de ces départements s'ils étaient livrés à eux-mêmes, obligés d'hospitaliser leurs propres malades, de recueillir ces cas-là dans leurs statistiques ? Leurs taux respectifs augmenteraient beaucoup, et, du même coup, celui de Paris baisserait, ce qui ne serait plus du tout favorable à l'hypothèse d'une géographie médicale faussée par concentration, sur les grandes villes, des malades venus d'une large périphérie et transformant, par leur seule présence, le caractère réel de la région considérée.

Ainsi, puisque les facteurs qu'on peut, à première vue, invoquer ne paraissent pas jouer, il faut qu'il y ait autre chose. Ce « quelque chose », est-ce la différence des conditions biologiques dont l'ensemble constitue le « milieu intérieur » de Claude Bernard, l'individu physiologique ; autrement dit, est-ce le facteur race qu'il faut envisager ? [1].

3. Les caractères anthropologiques des Français.

Il est impossible, dans une esquisse générale du genre de celle tentée ici, d'envisager la totalité des caractères morphologiques et descriptifs utilisés par les anthropologistes pour discerner les races humaines. Plusieurs de ces caractères ne sont, d'ailleurs, représentés que par de petites quantités d'observations. Et, dans un pays qui est un complexe ethnique comme la France, il faudrait, pour chaque département, posséder, pour assurer une analyse, pour en faire une base solide de discussion, des quantités considérables de documents.

Nous utiliserons les quatre renseignements les plus abondamment colligés : la stature, la forme cranienne, la couleur des yeux et des cheveux.

La stature.

La stature des Français, selon la répartition départementale, a été connue, à l'aide de grands nombres, comme dans les autres pays, grâce aux recrutements militaires. Des documents abondants ont été recueillis à plusieurs époques. Or, on sait que, d'une façon générale, la taille a partout augmenté en Europe au cours du siècle dernier et au début de celui-ci. Cette augmentation de la taille se faisant sentir dans tous les départements, peu importe le moment que nous choisirons pour représenter, à l'intérieur de la France, en vue de la démonstration que nous cherchons, la taille comparative des Français. Mais ce qu'il faut soigneusement éviter, c'est d'utiliser, pour la confection de nos cartes, des statistiques datant d'époques différentes.

Lorsqu'on examine d'abord, selon l'arrangement départemental, les caractères de la taille des Français, on constate que les groupes départementaux sont loin de présenter la même stature. Lorsqu'au lieu de la taille moyenne, calculée par département, on consulte les cartes des exemptés pour défaut de taille (carte N° 1) ou la répartition géogra-

[1] L'emploi du facteur race nous ramènera, j'imagine, sous un angle un peu différent de l'angle ordinaire, à envisager de nouveau le facteur hérédité. Le cancer particulièrement abondant chez certaines races, les conditions biologiques qui permettent le développement de cette maladie, ne représentent-elles pas un caractère d'hérédité collective ?

Liste des départements de la France

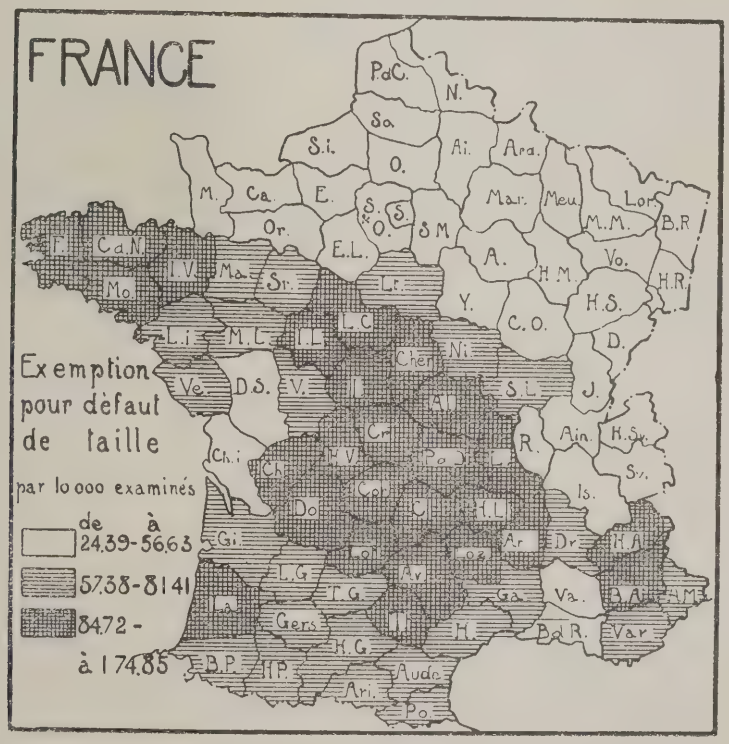
selon les abréviations employées dans les cartogrammes.

Ain	Ain
Ai.	Aisne
Al.	Allier
A.M.	Alpes-Maritimes
Ar.	Ardèche
Ard.	Ardennes
Ari.	Ariège
A.	Aube
Aude	Aude
Av.	Aveyron
B.A.	Basses-Alpes
B.P.	Basses-Pyrénées
B.R.	Bas-Rhin
B.d.R.	Bouches-du-Rhône
Ca.	Calvados
C.	Cantal
Ch.	Charente
Ch. i.	Charente-Inférieure
Cher	Cher
Cor.	Corrèze
C.O.	Côte-d'Or
C.d.N.	Côtes-du-Nord
Cr.	Creuse
D.S.	Deux-Sèvres
Do.	Dordogne
D.	Doubs
Dr.	Drôme
E.	Eure
E.L.	Eure-et-Loir
F.	Finistère
Ga.	Gard
Gers	Gers
Gi.	Gironde
H.A.	Hautes-Alpes
H.G.	Haute-Garonne
H.L.	Haute-Loire
H.M.	Haute-Marne
H.P.	Hautes-Pyrénées
H.S.	Haute-Saône
H.R.	Haut-Rhin
H.Sv.	Haute-Savoie
H.V.	Haute-Vienne
H.	Hérault
I.	Indre
I.L.	Indre-et-Loire
I.V.	Ille-et-Vilaine
Is.	Isère
J.	Jura
La.	Landes
L.	Loire
L.i.	Loire-Inférieure
L.C.	Loir-et-Cher
Lt.	Loiret
Lor.	Moselle
Lot	Lot
L.G.	Lot-et-Garonne
Loz.	Lozère
Ma.	Mayenne
M.L.	Maine-et-Loire
M.	Manche
Mar.	Marne
M.M.	Meurthe-et-Moselle
Meu.	Meuse
Mo.	Morbihan
Ni.	Nièvre
N	Nord
O.	Oise
Or.	Orne
P.d.C.	Pas-de-Calais
P.d.D.	Puy-de-Dôme
P.O.	Pyrénées-Orientales
R.	Rhône
S.L.	Saône-et-Loire
Sa.	Sarthe
S.	Seine
Sv.	Savoie
S.i.	Seine-Inférieure
S.M.	Seine-et-Marne
S.O.	Seine-et-Oise
So.	Somme
T.	Tarn
T.G.	Tarn-et-Garonne
Var	Var
Va.	Vaucluse
Ve.	Vendée
V.	Vienne
Vo.	Vosges
Y.	Yonne

Cartogramme N° 1.

FRANCE.

Répartition géographique de la proportion des conscrits exemptés pour défaut de taille, pour 10.000 examinés.



Dans quelques-uns de ces cartogrammes figurant la France, le département de la Moselle a été indiqué avec l'abréviation: Lor. (Lorraine). Le lecteur voudra bien lui-même faire la correction.

phique des hautes tailles, cette différence géographique saute aux yeux. Ces examens nous permettent de constater que, *grosso modo*, la France se divise en deux parties principales. Deux blocs s'affrontent qui ne sont pas très différents, comme étendue, sur la carte: un premier, nettement circonscrit dans la portion nord-orientale; l'autre occupant le reste de la France. Celui-ci peut, à son tour, se subdiviser de la manière que nous allons voir.

Cette première constatation est capitale. A elle seule, elle montre l'hétérogénéité de la population française.

Dans ses recherches sur l'ethnologie de la France, Broca reprenant les données de Devot, de Sistach, de Boudin, les complétant par ses propres observations [1], a délimité le territoire français où se montrent le moins d'exemptés militaires pour défaut de taille (stature inférieure à 1 m. 56). Ce groupe ne comprend pas plus de 24 à 56 exemptés sur 1.000 individus examinés. Il est composé par les départements situés au nord-est de la Seine.

Il faut signaler tout de suite la présence de quelques départements, détachés de ce bloc, ne présentant que peu d'exemptés pour défaut de taille. Parmi eux, les Deux-Sèvres et la Charente-Inférieure « répondent approximativement à une région où paraîtraient s'être fixés des colons ou mercenaires Sarmates, des Théifales indiqués par Grégoire de Tours, peut-être des Alains, qu'Ammien Marcelin dit être beaux et grands » [2].

Les départements où les exemptés pour défaut de taille sont dans la proportion de 57 à 81 $^{0}/_{00}$ des examinés, comprennent la plupart des départements du Midi, au sud de la Durance et de la Garonne, excepté le département des Landes. « Il correspond aux anciens pays des Ligures que Diodore de Sicile dit être de petites dimensions, et des Aquitains que Strabon dit ressembler aux Ibères, anciens habitants de l'Espagne ».

Les départements qui possèdent le plus grand nombre d'exemptés pour défaut de taille (84 à 174 $^{0}/_{00}$) s'étendent de l'Océan aux Alpes, de la Garonne auprès de la Seine. C'est l'ancienne Celtique de César et de Pline. Dans l'intérieur de la France, ces départements se groupent d'une manière assez homogène — c'est là surtout que nous trouverons le plus grand nombre de types brachycéphales, représentants de l'*Homo alpinus*. Puis nous constatons quelques morcellements: dans la Bretagne, dans la partie orientale du massif alpin.

Nous avons un autre moyen d'être renseigné sur la qualité de la stature des Français selon les départements, en examinant, non plus la quantité proportionnelle des exemptés pour défaut de taille, mais la répartition géographique à l'intérieur de la France, des hautes tailles. Les descendants des populations nordiques (ou kymriques ou germaniques) de haute stature, comme les Nordmans et les Burgondes, présentent peu d'exemptés pour défaut de taille. Les descendants des Ligures ou des Celtes en présentent bien davantage.

Les recherches anciennes de Boudin [3] sur la répartition départementale des recrues ayant plus de 1 m. 732 (carte N° 2) viennent en confirmation de ce qui a été dit ci-dessus. Elles montrent, au surplus, que la stature — ainsi que le dira Broca avec netteté — est un caractère de race parfaitement défini. Dans la carte à deux teintes qu'il a dressée, on voit, en gros, une répétition de ce qu'a montré la carte précédente. Les départements de hautes statures sont, moins trois, ceux qui composent la moitié presque de la France au nord-est. C'est la région peuplée par les Belges de l'époque romaine, les Franks et les autres immigrants venus d'outre-Rhin.

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[1] P. Broca: *Mémoire sur l'Ethnologie de la France*, « Mémoires de la Société d'anthropologie», Paris, 1860.
Id.: *Nouvelles recherches sur l'Anthropologie de la France en général et de la Bretagne en particulier*, « Mémoires de la Société d'anthropologie », Paris, 1869.
Nous avons pensé utiliser ces documents malgré qu'ils sont déjà un peu anciens. Le nom de l'homme qui les a colligés est la plus parfaite garantie de leur exactitude. La taille moyenne des divers départements français doit avoir légèrement augmenté depuis 1869.

[2] Gustave Lagneau: *Anthropologie de la France*, déjà cité.

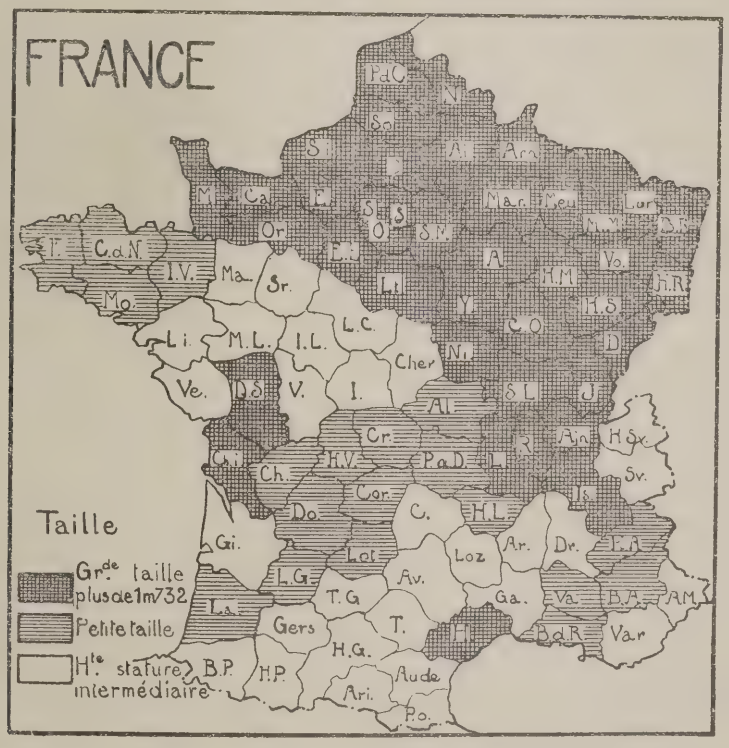
[3] Boudin: *Etude ethnologique sur la taille et le poids de l'Homme*, «Recueil des mémoires de médecine, de chimie et pharmacie militaires», 1863.
Id.: *De l'accroissement de la taille et des conditions d'aptitudes militaires en France*, « Mémoires de la Société d'anthropologie », Paris, 1863.

Cartogramme N° 2.

FRANCE.

Répartition géographique de la proportion des hautes tailles (694 à 1.560 individus sur 10.000 recrues) et de la proportion des petites tailles (moins de 500 sur 10.000).

Les départements non hachurés (les Savoies mises à part) possèdent des proportions de haute stature intermédiaires.



Les départements du centre, de l'ouest et du midi ne présentent qu'un petit nombre de recrues de haute taille. Nous retrouvons dans cet arrangement les deux départements de la Charente-Inférieure et des Deux-Sèvres qui, dans la carte des exemptés pour défaut de taille, faisaient déjà exception.

Je prie, dès maintenant, le lecteur de bien vouloir se souvenir de ce fait.

La troisième exception est celle du département de l'Hérault. Peut-être, ici, pouvons-nous faire intervenir les Volces dont l'origine germanique est probable, ou peut-être les Visigoths ?

Ainsi, de par ce seul renseignement morphologique, la taille, nous constatons que la France se divise en plusieurs provinces ethniques assez nettement délimitées. Les autres caractères anthropologiques viendront-ils confirmer ces subdivisions ?

L'indice céphalique.

La morphologie cranienne des hommes qui habitent la France confirme-t-elle ou infirme-t-elle les répartitions humaines créées par l'étude de la stature ? Il faut tout de suite faire ici une réserve. Nous ne possédons pas autant de documents sur l'indice céphalique que sur la taille. C'est que l'automatisme administratif des recrutements militaires, qui nous apporte tant de documents importants, n'intervient plus. Un seul pays, l'Italie, a jusqu'à présent associé, sur une vaste envergure, l'observation scientifique aux observations médicales militaires, et l'œuvre colossale de Livi reste encore inégalée [1].

Cette réserve est faite pour expliquer que tous les départements français ne nous montrent pas une physionomie anthropologique dessinée avec autant de certitude que l'a été la représentation de la stature. Il serait tout à fait désirable qu'au moment des recrutements militaires, une commission anthropologique recueille, ainsi que l'avait fait autrefois Collignon, pour une partie de la France, tous les documents qui sont encore nécessaires pour établir exactement la carte anthropologique de la France. Pourquoi de jeunes anthropologistes français, des médecins militaires assistant aux recrutements, ne vouent-ils pas une partie de leur activité scientifique à cette besogne ?

Malgré la pénurie trop réelle de renseignements devant laquelle nous sommes placés, nous pouvons donner une image approximative des qualités céphaliques des Français.

La plus vaste enquête personnelle entreprise à cet égard reste encore aujourd'hui celle de Collignon [2]. Elle est déjà ancienne. Elle est encore très insuffisante. Mais pour la plupart des départements qui, postérieurement aux efforts si méritoires de cet anthropologiste, n'ont plus été l'objet d'enquêtes scientifiques, elle garde sa valeur. Nous y ajouterons les renseignements recueillis depuis lors [3] qui ont légèrement modifié certaines données.

Si l'on reporte sur la carte de la France les indices céphaliques départementaux, on s'aperçoit que ces indices montrent, selon les régions, des valeurs très différentes. Mais ils ne sont tout de même pas, ethniquement parlant, un effarant tohu-bohu. Très vite, on s'aperçoit que des régions peuvent être délimitées chez lesquelles les formes craniennes apparaissent à peu près semblables.

C'est ainsi que les caractères dolichocéphaliques qui, au premier coup d'œil, semblent projetés au hasard dans tels ou tels départements, se groupent au contraire, assez nettement, en trois circonscriptions, l'une est au nord, l'autre dans la partie centre occidentale, la troisième comprend le littoral de la Méditerranée et une partie du massif pyrénéen (carte N° 3).

Et dès maintenant il faut constater que ces caractères de dolichocéphalie n'appartiennent pas à une seule race.

* * *

Examinons d'abord le premier groupement.

Il est composé par les départements limitrophes de la Belgique et par ceux d'une partie du littoral nord de la France.

Voici, pour cette région, quelques chiffres départementaux (indices calculés d'après les mesures sur le vivant : Nord 80 à 81; Pas-de-Calais 80,3; Somme 81,4; Aisne 80,9; Seine-Inférieure 80,3; Seine-et-Oise 81,4; Eure 81,3; Calvados 81,6. Vers l'est, les dépar-

[1] Ridolfo Livi: *Antropometria militare : Risultati ottenuti dallo spoglio fogli sanitarii dei militari delle classi* 1859-63. Parte I: *Dati antropologici ed etnologici*, Roma, 1896. Parte II.: *Dati demografici e biologici*, Roma, 1905.

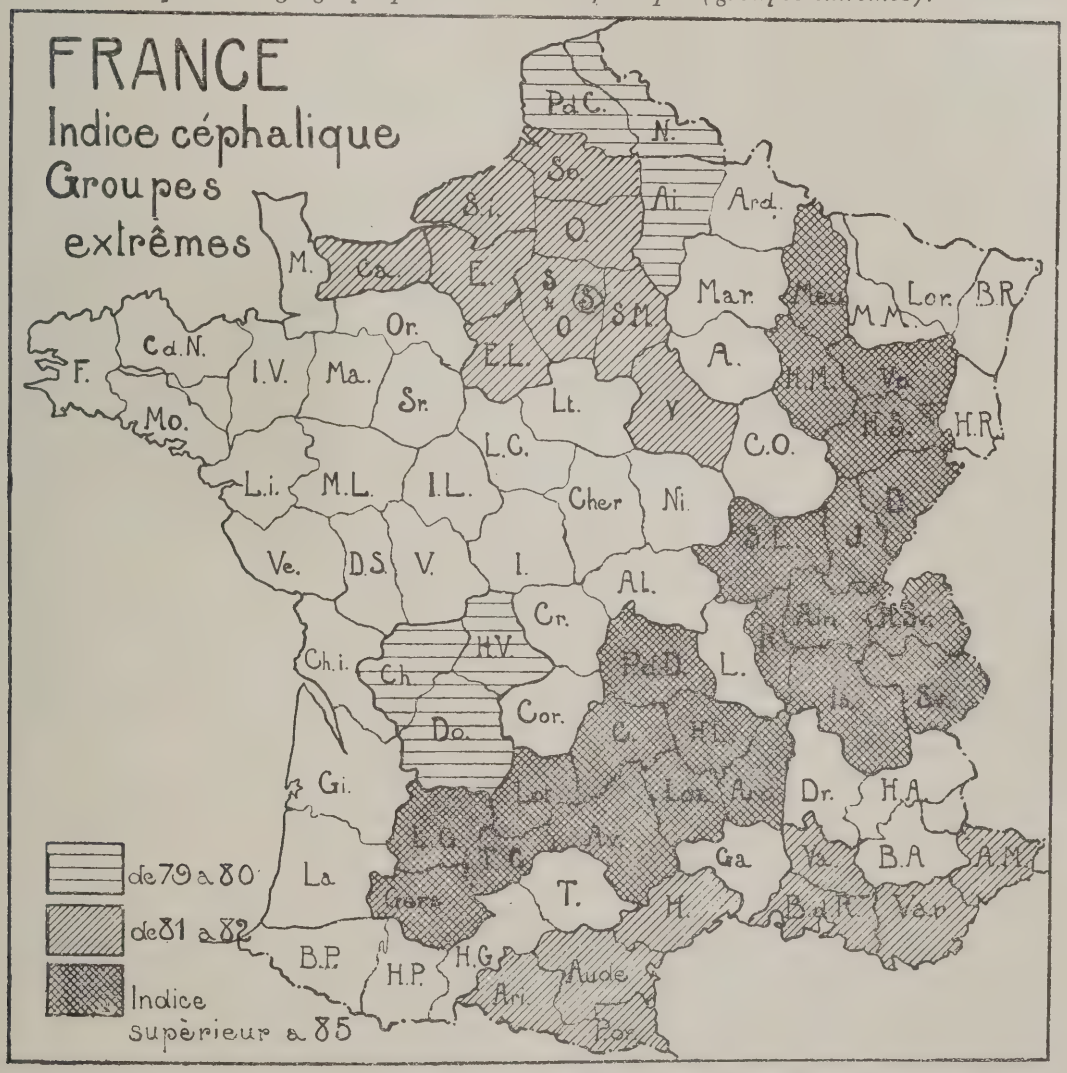
[2] Collignon: *L'indice céphalique des populations françaises*, « L'Anthropologie », Paris, 1890, page 201.

[3] Voir principalement: J. Deniker: *L'indice céphalique en Europe*. Association française pour l'avancement des sciences, Paris, 1899, plus quelques rares travaux subséquents.

Cartogramme N° 3.

FRANCE.

Répartition géographique de l'indice céphalique (groupes extrêmes).



tements voisins de la frontière [1] élèvent la valeur de leurs indices: Ardennes 83,2; Marne 84 (?); Meuse 85; Meurthe-et-Moselle 84 (?). L'indice céphalique révèle dans le nord de la France un fort îlot de crânes allongés. D'autre part, il faut se rappeler que nous trouvons, dans ces départements, des individus à stature élevée [2]. La preuve qu'il serait facile,

[1] N'oublions pas que, de l'autre côté de la frontière, les Belges wallons appartiennent, en partie, à la race brachycéphale dite celtique. Les enquêtes ont porté sur un trop petit nombre d'individus pour qu'on puisse en conclure qu'elles sont définitives.

[2] Les indices ci-dessus sont des chiffres globaux, obtenus sans choix préalable (on aurait pu rassembler les hommes de grande taille pour associer ces deux caractères).

par un choix géographique, de montrer des indices céphaliques moyens beaucoup plus faibles, nous est donnée par quelques enquêtes locales citées par Deniker: Arras (Pas-de-Calais) 79,6; Cambrai (Nord) 79,5; Saint-Quentin (Aisne) 79,3; Le Havre 79,8. Il est certain que le nombre des dolichocéphales est très grand dans ces départements septentrionaux.

La seconde région renfermant des crânes à caractères dolichocéphales est la région périgourdine de Deniker [1], occupant l'ancien pays du Périgord, le Limousin, le Berry et l'est du Poitou. Le département de la Dordogne a des indices allant de 78 à 79,2. Ce massif sous-dolichocéphale se continue par la partie sud de la Charente (arrondissements d'Angoulême et de Barbezieux 79,4), le sud-est de la Haute-Vienne (arrondissements de Limoges, 79,2, et de Saint-Yriex 79,5), la partie sud-est de la Charente-Inférieure (sud de l'arrondissement de Jonzac 79). Une pointe septentrionale du département de la Gironde, certaines régions de l'Indre et de la Haute-Vienne nous montrent, à l'évidence, que des enquêtes plus étendues créeraient définitivement, dans cette partie de la France, un îlot important de sous-dolichocéphalie. Cette région ethnique se bute à l'est et au sud-est à un massif à indice céphalique élevé, à une race humaine toute différente.

La troisième région où se rencontre une majorité de types à crânes allongés comprend les départements pyrénéens et ceux du littoral de la Méditerranée. Ces derniers marquent mieux que les autres ce caractère dolichoïde. Dans les Basses et dans les Hautes-Pyrénées, le nombre des individus à tendances dolichocéphaliques paraît moins nombreux qu'à l'est. Voici, cependant, quelques chiffres qui indiquent nettement leur présence: Bayonne 81,7; Orthez 82,9; Mauléon, partie est, 81,8; Oloron 82,2; les cantons béarnais sont moins dolichocéphales (83,4) que les cantons gascons (81,8).

Dans les Pyrénées-Orientales l'indice céphalique moyen est encore moins élevé (77,6 à 78,7 suivant les arrondissements), mais, dans l'Ariège, se rencontrent des populations plus souvent brachycéphales ou sous-brachycéphales. Les départements de l'Aude et de l'Hérault ont des indices céphaliques peu élevés (de 79,8 à 82 selon les arrondissements). Les départements de Vaucluse et des Bouches-du-Rhône sont tous les deux mésocéphales avec l'indice 81,5; ceux du Var et des Alpes-Maritimes sont sous-brachycéphales avec les indices 82,3 et 82,4.

Mais nous devons constater encore ici que nous n'utilisons qu'un seul caractère morphologique, et que ce seul caractère est tout à fait insuffisant pour délimiter une race.

* * *

Sans empiéter sur ce qui sera dit plus loin, signalons, cependant, que déjà deux races principales nous sont révélées: au nord, les représentants de la race nordique *(Homo europaeus*, type kymrique, etc.); au sud, les représentants de la race ibéro-insulaire ou méditerranéenne *(Homo meridionalis)*.

Quant au troisième groupe dolichoïde du centre-ouest, il y a bien des chances pour qu'il soit composé par les descendants des populations dolichocéphales du Paléolithique et du Néolithique, de celles qui ont laissé tant de traces dans les cavernes ou dans les grands ossuaires de cette partie de la France, comme celui de Baumes-Chaudes, par exemple.

Quant à la France brachycéphale, elle comprend toutes les parties montagneuses — sauf les Pyrénées — et les massifs topographiquement les mieux rassemblés, les plus compacts, présentent les hommes aux indices céphaliques les plus élevés. Dans de telles

[1] J. Deniker, *L'indice céphalique en Europe*, déjà cité.

circonscriptions, la race, grâce aux isolements géographiques, s'est conservée plus pure. Cette agglomération brachycéphale est plus homogène que les autres groupements marqués par les indices céphaliques Elle présente quelques contours découpés, car nous voyons des contingents à indices moins élevés, infiltrés dans la masse des hommes à crânes arrondis.

Une première masse brachycéphale se rencontre à l'est. Elle est composée des départements de la Meuse (ind. 84 à 86), moins l'arrondissement de Montmédy; de la Meurthe (85 à 85,6); des Vosges (85 à 88); de la Haute-Saône (86 à 88); du Doubs (86,6); du Jura (86 à 87); de l'Ain (86); de la Haute-Savoie (86,5); de la Savoie (87); des Hautes-Alpes (84,9).

La seconde grande agglomération brachycéphale comprend les départements du Lot-et-Garonne (84 à 87); du Gers (85 à 86); du Lot (85 à 86); de Tarn-et-Garonne (86,5); de l'Aveyron (85 à 87); du Tarn (84 ?); de la Lozère (88,8); de l'Ardèche (85 à 88); de la Drôme (84,7); de l'Isère (85,6); du Rhône (84 à 85); de la Corrèze (84 à 86); du Puy-de-Dôme (85,5); de la Loire (84); de Saône-et-Loire (86 à 87); du Morvan, dont Hovelacque et Hervé ont montré la brachycéphalie [1].

C'est là, bien entendu, une géographie à vol d'oiseau.

Tout de même, il est bien entendu que les populations françaises ne se sont pas cantonnées en tels ou tels lieux de la France, selon la valeur de leur indice céphalique. Au cours de l'histoire, il y a eu des flux et des reflux causés par des raisons naturelles, les faits de guerre, des déplacements et des infiltrations pacifiques. Mais il n'en reste pas moins qu'il est possible de considérer, dans l'état actuel de nos connaissances, à cause de son homogénéité relative, le massif brachycéphale qu'en dernier lieu nous venons de délimiter comme un massif ethnique auquel nous pouvons donner une place dans la classification. Il est bien certain qu'une très grande partie des populations qui le compose appartient à la race occidentale ou cévenole de Deniker, à l'ancienne race dite celtique de Broca *(Homo alpinus)*.

A l'ouest de la France, séparée de ce massif brachycéphale quasiment compact, se trouve, dans la vaste presqu'île dont la pointe extrême est formée par le Finistère, une agglomération où les types brachycéphales sont nombreux. De la Manche à la Vendée, avec quelques départements en retrait vers l'est, nous enserrons, dans cette sorte de triangle, des populations dont l'indice céphalique est presque toujours assez élevé. Il en est ainsi pour la Manche (84 à 85), l'Ile-et-Vilaine (84 à 85), les départements des Côtes-du-Nord (84 à 85), du Finistère et du Morbihan (82,7), de la Loire-Inférieure (84), du Maine-et-Loire (85), de la Vendée (84,5).

L'enquête détaillée par canton — hélas! elle a été faite en peu d'endroits — montre que les indices moyens sont loin d'indiquer la physionomie ethnique exacte de la population. Il suffit, pour en être convaincu, de se reporter aux travaux de R. Collignon sur l'anthropologie des départements de la Manche et des Côtes-du-Nord [2], où nous voyons des cantons côtiers ne présenter qu'un indice de 80, alors que d'autres cantons du littoral et de l'hinterland arrivent à l'indice 87. Ce sont des enquêtes poussées aux détails, comme celles-là, qu'il faudrait pouvoir utiliser. Malheureusement, les doigts d'une seule main suffisent à compter celles qui existent.

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[1] Hovelacque et Hervé: *Recherches ethnologiques sur le Morvan*, « Mémoires de la Société d'anthropologie », Paris, 1894.

[2] R. Collignon: *L'Anthropologie au Conseil de revision; méthode à suivre. Son application à l'étude des populations des Côtes-du-Nord*, « Bulletin de la Société d'anthropologie », Paris, 1890, page 736.

Voir aussi du même auteur: *Anthropologie de la France : Dordogne, Charente, Corrèze, Creuse, Haute-Vienne.* « Mémoires de la Société d'anthropologie », Paris, 1894, *Anthropologie de la France : les Basques*, idem, 1985.

Les taux les plus élevés et les moins élevés de mortalité par cancer en regard de la stature et de l'indice céphalique.

Avant d'aller plus loin, nous voulons tenter une comparaison entre les caractères de la taille et de l'indice céphalique et les taux de mortalité par cancer.

Une comparaison de cette nature portant sur les 86 départements risquerait d'être confuse à cause même de la quantité de documents qui seraient mis sous les yeux du lecteur. Pour simplifier, pour donner à cet essai plus de clarté, j'ai fait dans la liste des départements rangés selon l'ordre croissant des taux de mortalité, deux coupures, l'une me permettant de conserver les départements où la mortalité est la plus haute, l'autre réserve les départements où la mortalité est la plus faible.

Voici les résultats obtenus:

Départements	Taux de mortalité par cancer par 10.000 habitants	Taille moyenne par département	Indice céphalique moyen
Côte-d'Or	25,30	1,664	84,01
Sarthe	25,44	1,642	83,84
Calvados	26,58	1,648	81,62
Vendée	26,86	1,642	84,47
Pas-de-Calais	27,57	1,647	80,36
Loire	27,76	1,635	84,04
Seine-et-Marne	29,05	1,650	82,86
Loiret	29,83	1,629	83,08
Oise	30,97	1,651	82,60
Seine-et-Oise	31,40	1,650	81,57
Loir-et-Cher	31,45	1,636	83,30
Nord	31,48	1,657	80,38
Marne	32,16	1,652	84,11
Eure-et-Loir	32,67	1,647	82,27
Aisne	33,15	1,649	80,9
Seine	34,54	1,643	81,57
Rhône	35,39	1,646	86,01
Somme	37,27	1,649	81,88
Seine-Inférieure	38,33	1,642	81,10

Un seul coup d'œil sur ce tableau montre que le taux maximum du cancer se rencontre aussi bien dans des départements de petite taille, comme le Loiret (1 m. 629), la Loire (1 m. 635), ou le Loir-et-Cher (1 m. 636), que dans des départements de taille relativement haute, comme la Côte-d'Or (1 m. 664). La moyenne de la stature en France étant aux environs de 1 m. 65, ce sont des statures de cet ordre, ou très voisines, que nous rencontrons en regard des taux de mortalité élevés.

Il ne semble donc pas que nous puissions lier un rapport entre les maxima du cancer et un type spécial de stature.

Nous avons groupé tous les taux de mortalité entre 25 et 30 pour 10.000 habitants, d'un côté, et tous ceux compris au delà de ce chiffre, et nous avons calculé les tailles moyennes. Nous avons trouvé respectivement 1 m. 644 et 1 m. 643, c'est-à-dire des valeurs sans signification.

La troisième colonne renferme les indices céphaliques. A les voir rapidement, il semble qu'il n'y a pas non plus grand'chose à en attendre. Nous trouvons des indices relativement

faibles comme ceux du Pas-de-Calais (80,36), du Nord (80,38), de l'Aisne (80,9) et des indices élevés comme celui du département du Rhône (86,01). Pour ce dernier département, le maximum cancéreux peut s'expliquer par le grand centre hospitalier qu'est Lyon. Toutefois, en excluant cet indice céphalique de 86 fourni par le département du Rhône, nous constatons qu'aucun indice n'atteint 85. Sur 19 indices exposés, quatre seulement ont une valeur atteignant 84.

Il semble qu'ici nous sentons venir comme une indication, puisque nous savons que beaucoup de départements français ont des indices céphaliques élevés. Sur les 19 indices figurant dans ce tableau, il y en a onze qui ne dépassent pas 82, ce qui équivaut au 58 %.

Une conclusion générale pourrait déjà être déduite de cette dernière constatation: les taux les plus élevés de la mortalité cancéreuse en France se rencontrent principalement dans les départements dont la population possède un crâne dont la forme tend vers la dolichocéphalie.

Passons maintenant à l'autre extrémité de l'échelle des taux de mortalité.

Départements	Taux de mortalité par cancer par 10.000 habitants	Taille moyenne par département	Indice céphalique moyen
Lozère	3,09	1,632	87,87
Tarn-et-Garonne	6,48	1,632	85,80
Ariège	6,66	1,638	82,89
Hautes-Alpes	7,15	1,627	84,37
Tarn	7,43	1,639	83,72
Dordogne	7,80	1,623	79,17
Charente	7,92	1,627	80,93
Corse	8,24	1,626	76,93
Gers	9,03	1,634	86,20
Hautes-Pyrénées	9,35	1,650	83,67
Haute-Saône	10,19	1,666	87,37
Morbihan	10,44	1,627	82,62
Haute-Garonne	10,55	1,635	83,43
Savoie	11,87	1,639	97,39
Haute-Marne	12,58	1,663	84,90
Haute-Savoie	13,05	1,652	86,25
Pyrénées-Orientales	13,58	1,636	78,24
Var	13,86	1,643	82,77
Vienne	13,90	1,639	82,94
Puy-de-Dôme	14,74	1,627	85,53
Deux-Sèvres	14,99	1,634	82,83

Nous avons considéré, pour cet examen, comme taux minimum, ceux qui n'atteignent pas 15 pour 10.000 habitants. Sur 86 départements français, nous en trouvons 21. Ils s'échelonnent de 3,09 (Lozère) à 14,99 (Deux-Sèvres). Le taux offert par le département de la Lozère peut être considéré comme extraordinairement bas, et on peut se demander, *a priori*, quelle peut être la valeur scientifique de ce chiffre. Dix départements ont un taux de mortalité inférieur à 10. Ils sont tous situés dans le sud et à l'ouest de la France.

Si nous examinons la colonne des statures, nous y voyons figurer des tailles notablement inférieures à la moyenne; 16 départements, sur 21, ont une stature qui ne dépasse pas (les millimètres mis à part) 1 m. 63. Quatre départements seulement atteignent ou dépassent 1 m. 65 (Hautes-Pyrénées, Haute-Marne, Haute-Saône, Haute-Savoie). Il semble qu'on pourrait à première vue conclure, à l'aide de ce tableau, qu'il existe un rapport entre les petites statures et les faibles taux de mortalité par le cancer.

J'ai calculé la taille moyenne afférente aux taux de mortalité n'atteignant pas 10 et celle des départements à taux compris entre 10 et 15. Je trouve respectivement les deux

statures 1 m. 632 et 1 m. 642. On pourrait dire que, dans ce groupement spécial, le cancer est surtout fonction des statures les plus élevées.

* * *

Quant aux indices céphaliques, ils nous montrent de grandes variations: de 76,93 (Corse) ou 78,24 (Pyrénées-Orientales) à 87,87 (Lozère).

Nous allons faire avec l'indice céphalique le même arrangement que celui de tout à l'heure établi à l'aide de la taille. La moyenne du premier groupe est 83,57, celle du second 84,02. L'indice céphalique le moins fort caractérise les départements à taux de mortalité cancéreuse relativement faible. Mais n'oublions pas qu'un tel indice de moindre brachycéphalie — plus faible que celui du groupe à plus forte mortalité — s'associe à une stature plus petite que la stature de ce dernier.

En résumé, la comparaison des statures et des formes craniennes en fonction des taux minimum et maximum de mortalité ne conduit à aucune solution satisfaisante.

La raison en est simple. Nous n'avons pas le droit de tenter une pareille comparaison sans tenir compte de la répartition géographique des caractères anthropologiques.

C'est ce que nous allons faire dans un instant, après avoir examiné quelques autres renseignements servant à caractériser les races humaines.

Il est bien certain, pour qui connaît la France, que la stature seule, ou l'indice céphalique seul, ne peuvent être envisagés tels quels, comme un étalon de comparaison, puisque nous savons que plusieurs groupes ethniques peuplent la France. Dans ce pays, la dolichocéphalie sert à caractériser — entre autres caractères — trois races, la race nordique, la race méditerranéenne, la race dolichocéphale de l'ouest, descendants probables des Dolichocéphales paléolithiques.

La couleur des yeux et des cheveux.

Les premières indications de quelque importance au sujet de ces deux caractères remontent principalement à Beddoe qui, après ses nombreuses enquêtes dans les Iles Britanniques, avait pris pour champ de ses recherches la France [1]. A l'aide de son indice de nigrescence obtenu selon la formule:

(2 noirs + bruns) — (blond + roux) = indice de nigrescence [2]

il avait montré, utilisant plusieurs milliers d'observations, que de grandes variations existaient dans l'intérieur de la France quant à la couleur des yeux et des cheveux de ses habitants. C'est ainsi que ses indices de Cherbourg et de Dieppe étaient respectivement de 12,7 et 38,2, tandis que ceux de Quimper et de Saint-Nectaire étaient respectivement de 97 et de 100. C'était déjà marquer, par des nombres, les variations considérables de la pigmentation à la surface du sol français. Les tableaux qu'il a donnés — très courts pour ce qui concerne la France, laquelle n'était pas l'objectif principal de Beddoe — montrent à eux seuls la présence dans le nord de la République, d'une population aux cheveux clairs, tandis que, dans le massif central, par exemple, et dans certaines circonscriptions de la Bretagne — où nous savons aujourd'hui qu'il existe des brachycéphales aux cheveux foncés — ces tableaux faisaient déjà ressortir cette présence.

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[1] Beddoe: *Sur la couleur des yeux et des cheveux de la France du nord et du centre*, « Bulletin de la Société d'anthropologie », Paris, 1882.

Id., *Sur la couleur des yeux et des cheveux en diverses autres parties de la France*, « Bulletin de la Société d'anthropologie », Paris, 1883.

Id., *Sur la couleur des yeux et des cheveux en Suisse et en Savoie*, « Bulletin de la Société d'anthropologie », Paris, 1884.

[2] Considérant que dans les cheveux noirs il y a un maximum de pigments, Beddoe double leur nombre exprimé, y ajoute les cheveux bruns foncés et en retranche le total des cheveux roux et blonds.

Depuis ce moment déjà lointain, diverses enquêtes ont été entreprises par des anthropologistes français, mais c'est aux grandes statistiques de Topinard qu'il faut recourir, si nous voulons avoir quelque idée de la répartition de la couleur des yeux et des cheveux en France.

Les cartes Nos 4 et 5 que nous soumettons à l'attention des lecteurs lui sont empruntées et leur arrangement nous paraît suffisamment démonstratif pour les fins que nous poursuivons [1].

La carte de la couleur des cheveux (carte No 4) montre très nettement, dans le nord et l'est de la France, une large zone où les habitants ont principalement les cheveux clairs. Les départements qui sont au septentrion d'une ligne formée par la Manche, l'Orne, l'Eure-et-Loir, l'Oise, l'Aube, la Haute-Marne, les Vosges sont ceux qui renferment les plus grandes quantités de blonds. Il faut y ajouter trois départements enclavés, le Jura, la Nièvre et le Morbihan.

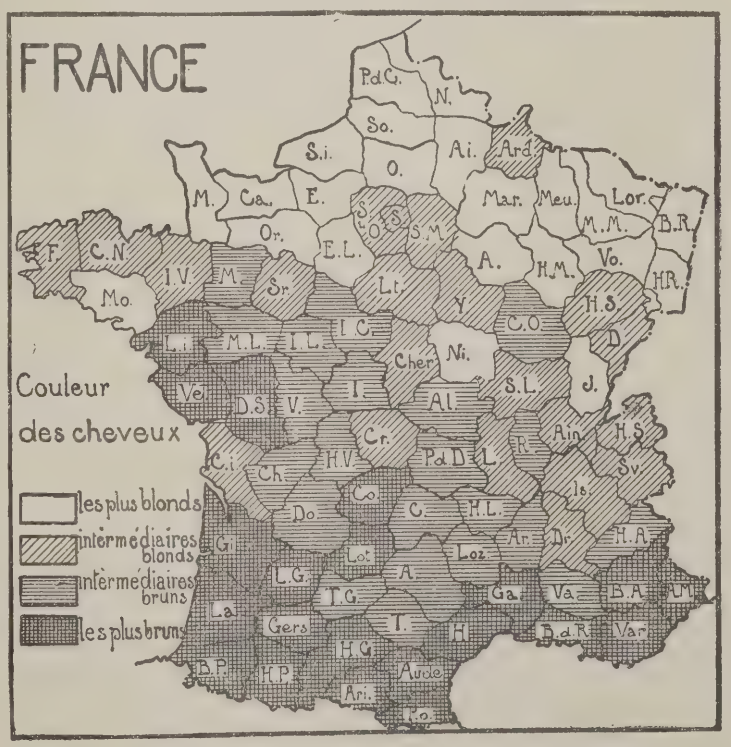
On remarquera déjà, en se reportant aux cartes de la taille et de l'indice céphalique, que ce sont là les départements de la plus haute stature en même temps qu'ils sont, dans leur majorité, ceux qui ont les crânes les plus dolichocéphales. Ainsi nous pouvons déjà associer trois caractères et dire que la population du nord de la France est en majorité de haute taille, qu'elle a un crâne allongé et des cheveux blonds.

A ces départements, les plus blonds de la France, nous pouvons ajouter ceux dont les habitants présentent en majorité des cheveux de nuances claires, de ceux que Topinard a classé dans les « intermédiaires blonds ». Ces départements forment comme une avant-garde vers le centre et vers le sud de la France. Et certains d'entre eux, comme la Charente-Inférieure, par la

Cartogramme No 4.

FRANCE.

Répartition géographique de la couleur des cheveux. Les types bruns et blonds (d'après Topinard).



[1] TOPINARD: *Couleur des yeux et des cheveux en France*, « Association française pour l'avancement des sciences », 1889, page 623.

Il est bien certain qu'il faudrait pouvoir aller au delà de ce que montrent les enquêtes de Topinard. Celles-ci doivent être considérées comme la première étape de recherches beaucoup plus étendues. Il paraît nécessaire que chaque subdivision géographique soit plus abondamment représentée. Il serait du plus haut intérêt de poursuivre une telle enquête dans les territoires considérés comme les plus nordiques, ou les plus celtiques, etc.

coloration de leur chevelure, nous remettent en mémoire certaines invasions accomplies par des hommes appartenant vraisemblablement à la race nordique.

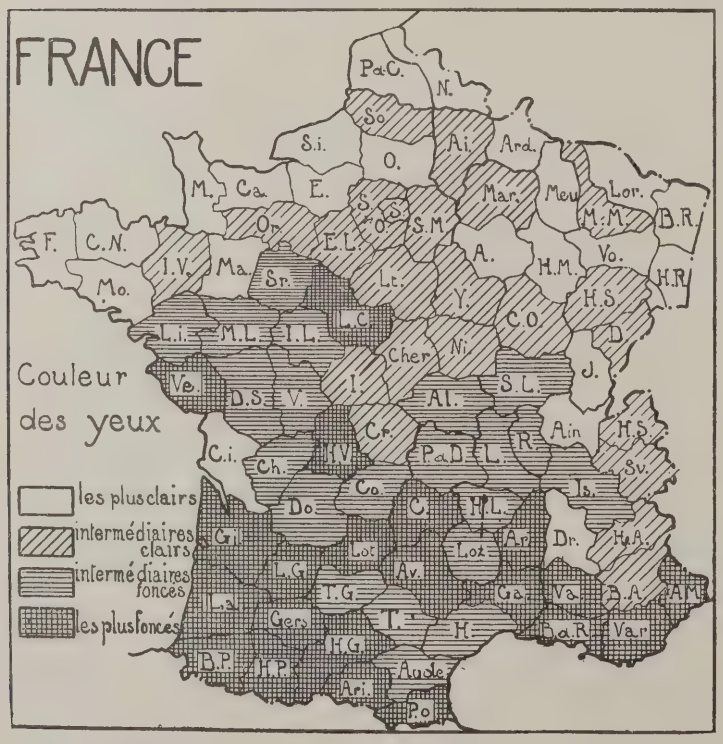
Lorsqu'on quitte la ligne des départements blonds, dont il a été question ci-dessus, et que l'on s'avance vers le sud, on constate que, d'une façon générale, la pigmentation augmente. Nous passons des départements « intermédiaires blonds » aux départements « intermédiaires bruns ». Ces derniers, *grosso modo*, composent le centre de la France. Et nous arrivons dans la zone méridionale, comprise entre le golfe de Biscaye et la frontière italienne, où nous trouvons les départements les plus bruns. La carte montre une opposition très nette entre les deux extrémités de la France nord et sud. L'une généralement blonde, l'autre généralement brune.

Quelques départements à pigmentation capillaire foncée sont en dehors de ce massif de bruns : la Loire-Inférieure, la Vendée et les Deux-Sèvres. La plupart des départements du sud, aux cheveux les plus bruns, montrent, en même temps, des populations de petite stature, aux crânes allongés. Nous constatons là les caractéristiques de la race ibéro-insulaire, ou méditerranéenne (*Homo meridionalis*).

Cartogramme N° 5.

FRANCE.

Répartition géographique de la couleur des yeux (d'après Topinard).



Ainsi, graduellement, de par l'adjonction de ce troisième caractère que nous analysons, nous acquérons plus nettement la certitude qu'il existe sur le sol de la France trois races principales — nous les avons indiquées dans les premières pages de ce chapitre — et nous pressentons l'intérêt que prendra la répartition du cancer dans un tel pays.

La couleur des yeux.

Ajoutons maintenant quelques rapides indications au sujet de la couleur des yeux.

L'enquête, ici, est plus difficile à faire. L'observation de ce caractère est moins aisée que celle des cheveux, surtout de la part d'enquêteurs qui n'ont pas toujours été des anthropologistes. Néanmoins, la carte de Topinard[1] apporte des renseignements bien intéressants (carte N° 5).

[1] TOPINARD : *Couleur des yeux et des cheveux en France*, déjà cité.

En envisageant les résultats de cette observation dans leurs grands traits, on constate que les yeux les plus clairs sont une des caractéristiques anthropologiques du nord de la France. Une ligne idéale, qui irait de la Loire-Inférieure au lac de Genève, limiterait, au sud, les départements aux yeux les plus clairs. Dans le midi de la France, une ligne idéale qui irait de la Gironde à la limite méridionale de la Savoie, enserrerait entre elle et la frontière espagnole — moins quelques départements — les populations aux yeux les plus foncés. Nous trouvons là une confirmation de ce qu'a montré la carte de la couleur des cheveux. Et tout ce qui a été dit ci-dessus à propos de l'utilisation ethnique de cette dernière s'applique ici.

* * *

Il est hors de doute que de telles cartes ne nous représentent que des états anthropologiques généraux, c'est-à-dire imprécis. Nous ne devons les considérer que dans leurs ensembles et seulement comme des documents provisoires. Mais, cependant, on l'a constaté, ces ensembles apportent chaque fois une confirmation de ce que le précédent caractère avait démontré. Il serait donc impossible de croire que les quatre observations qui viennent d'être colligées: taille, indice céphalique, couleur des cheveux et couleur des yeux auraient toutes convergé pour nous faire envisager une erreur.

D'un autre côté, il ne faut pas s'étonner de constater certaines enclaves, ou certains prolongements, dans tel sens géographique, de tel ou tel caractère anthropologique. Les races françaises n'ont pas subi, dès le Paléolithique, l'obligation de rester cantonnées à l'endroit même où elles se sont fixées pour la première fois. Nous savons combien, dans les premiers siècles de notre ère, le territoire de la France a vu passer d'invasions. Et celles-ci, fatalement, causent quelques brassages dans les populations, même les plus sédentaires d'un pays, produisent quelques déplacements et quelques métissages. Les caractères moyens renferment des éléments dissemblables.

Malgré toutes ces réserves nécessaires, il n'en reste pas moins que nous avons en mains des documents anthropologiques suffisants pour nous permettre de tenter — nous voulons être prudents — des comparaisons entre les éléments ethniques révélés par ces documents et n'importe quel facteur, par exemple le cancer. Nous allons essayer cette comparaison.

4. La répartition du cancer en France selon les races humaines.

Les documents que nous avons utilisés pour cette étude — statistiques des taux de mortalité par cancer et recherches anthropologiques — sont assez restreints quant à l'étendue des enquêtes qui les ont fournis. Mais nous pensons qu'ils sont suffisants pour le but que nous nous proposons, qui est de savoir s'il existe un rapport entre les races et le cancer, ou si ce que nous avons imaginé dans une conférence publiée dernièrement [1] doit être tenu pour nul et non avenu.

La mortalité par cancer en France a été calculée sur les statistiques 1911-1913 par départements (carte N° 6). Ici, nous rappelons quelques lignes écrites au début de ce chapitre, relatives à la valeur des statistiques de la mortalité du cancer en France selon ces

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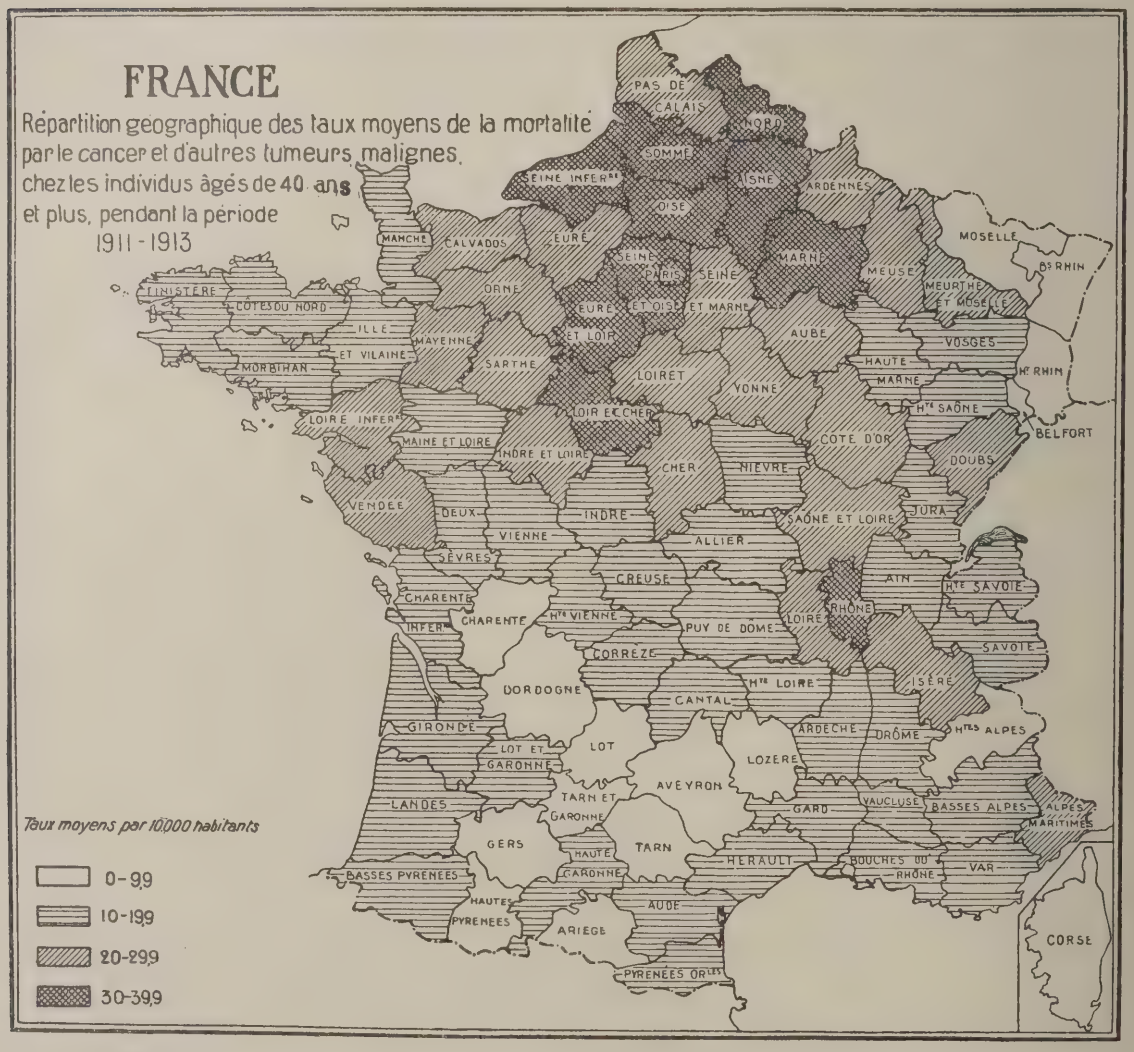
[1] Eugène Pittard: *Le cancer dans les races humaines.* Etude sur la répartition géographique et ethnique du cancer. Conférence prononcée à la Société de géographie de Genève, le 24 avril 1925.

subdivisions. Encore une fois nous pensons — et c'est l'avis de beaucoup de statisticiens — que les résultats utilisés ici sont, pour ce qui concerne une grande partie de la France, comparables entre eux [1].

Cartogramme N° 6.

FRANCE.

Répartition géographique de la mortalité par cancer et autres tumeurs malignes parmi la population âgée de 40 ans et plus, période 1911-1913.



[1] Ils ne le sont probablement pas pour ce qui concerne certaines régions départementales figurant en tête des taux minimum. *A priori*, ceux-ci paraissent extraordinairement bas.

Nous avons déjà dit qu'un examen rapide de cette liste départementale fait voir qu'il existe de criantes variations dans le taux de la mortalité du cancer en France selon les lieux que l'on habite. Nous constatons d'abord (carte N°7) des minima très bas qui seraient, s'ils sont exacts, très réjouissants pour la population de ces régions : la Lozère 3,09, l'Aveyron 4,81, le Tarn-et-Garonne 6,48, l'Ariège 6,66, le Lot 7, les Hautes-Alpes 7,15, le Tarn 7,43, la Dordogne 7,80, la Charente 7,92, le Gers 9,03. La moyenne de ces 10 départements est de 6,73 [1].

En face de ce minimum de mortalité par cancer, nous pouvons placer un maximum. Nous le composons aussi avec 10 départements qui sont dans l'ordre décroissant du taux de mortalité : Seine-Inférieure 38,33, Somme 37,27, Rhône 35,39, Seine 34,54, Aisne 33,15, Eure-et-Loir 32,67, Marne 32,16, Nord 31,48, Loir-et-Cher 31,45, Seine-et-Oise 31,40.

La moyenne de ce groupe est 33,79. Elle est cinq fois supérieure à celle du premier groupe. Comment interpréter une pareille différence ?

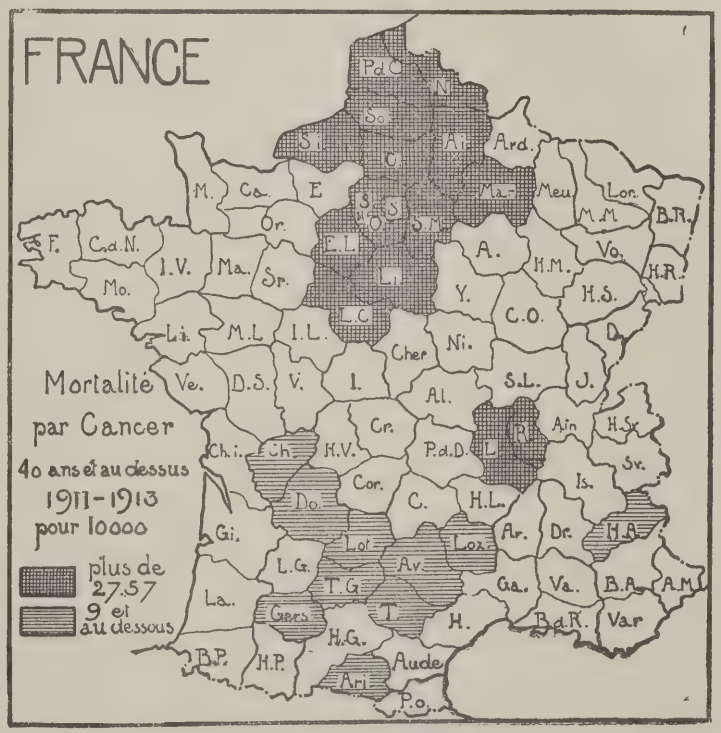
Faut-il accuser de mauvaises statistiques dans le premier cas et d'excellentes statistiques dans le second ?

Faut-il invoquer tout d'abord le milieu géographique, la différence de nourriture, ou telle autre influence mésologique ?

Cartogramme N° 7

FRANCE.

Répartition géographique de la mortalité par cancer, taux extrêmes, *parmi la population âgée de 40 ans et plus, proportion pour 10,000, période 1911-1913.*



En jetant un coup d'œil sur la carte, on s'aperçoit que les chiffres minima sont ceux des départements situés au sud de la France. Faut-il croire que la seule position géographique vers le midi, plus riche en insolation, est la cause efficiente du peu de mortalité par le cancer, tandis que la position géographique vers le nord multiplie les causes de cette maladie ? Il serait facile, assurément, de trouver des oppositions alimentaires entre le nord et le midi de la France, de même qu'il est aisé d'y constater des oppositions de climats. Mais il y

[1] Depuis que ces lignes ont été écrites, j'ai appris que — je l'ai dit ci-dessus — les statistiques de certains départements doivent être tenues pour suspectes. Les déclarations de décès y sont tout à fait insuffisantes. Souvent, elles sont faites par des personnes n'appartenant pas au corps médical. Il y a là toute une réforme à accomplir.

aurait tant de facteurs à envisager, tant de multiples variations dans les genres de vie qui neutraliseraient les causes qui viennent d'être considérées qu'il vaut mieux, comme première étape de recherches, s'en tenir au seul point de vue qui dirige la présente étude.

* * *

Si l'on se reporte aux cartes ethniques dont il a été question dans les pages précédentes, on s'aperçoit bien vite que le maximum de mortalité par cancer coïncide, *grosso modo*, avec les départements de haute stature dont les populations ont un crâne à tendance dolichocéphale, des cheveux surtout blonds, et des yeux surtout clairs. Autrement dit, ce maximum de mortalité est inclus dans le domaine de la race nordique. Dans une étude précédente [1], j'ai montré que les résultats de toutes les enquêtes actuelles (en admettant leur réalité scientifique) convergeaient vers cette conclusion: que parmi les diverses races humaines de l'Europe, celle qui est la plus touchée par le cancer est justement la race nordique. D'ailleurs, il suffit de comparer les statistiques colligées par Hoffman pour être dirigé vers une telle conclusion.

Serait-ce une confirmation, par la France, de ce que nous a montré l'Europe dans son ensemble ?

L'étude que nous rappelons permettait de croire à une beaucoup plus faible mortalité de la race ibéro-insulaire et de la race dinarique, tandis que les types brachycéphales dits celtiques ou cévenoles (*Homo alpinus*) bénéficiaient d'une position intermédiaire.

L'histoire du nord de la France, rappelée dans les premières pages de ce chapitre, nous a montré à quel degré ce territoire a été envahi, déjà avant notre ère, et sans cesse depuis lors, en particulier dans les premiers siècles, par des populations d'origine nordique. Dans un passé plus lointain encore, nous retrouvons la trace d'invasions et d'installations semblables. Les grottes sépulcrales de la Marne, qui datent du Néolithique, fouillées jadis par de Baye, et dont des ossements ont été étudiés entre autres par Quatrefages et par Broca, ont montré la qualité ethnique de ces envahisseurs préhistoriques qui ont été suivis, sans cesse, par d'autres bandes à l'âge du bronze et à l'âge du fer.

Un anthropologiste à qui l'on aurait posé la question de savoir — connaissant la fréquence du cancer chez les races nordiques — dans quelle région de la France il rencontrerait le maximum de mortalité, avec de telles prémisses n'aurait pas hésité.

Mais le nord et le nord-est de la France ne sont pas peuplés exclusivement de nordiques. Malheureusement, nous n'avons pas encore assez de documents pour discerner nettement la physionomie ethnique détaillée de ces départements.

La carte des hautes tailles a montré que beaucoup d'autres départements voisins, à l'est surtout de ceux qui présentent le maximum de mortalité par cancer, participent au cantonnement des hautes statures. Mais il ne faudrait pas considérer ce seul caractère pour conclure quoi que ce soit, car si nous jetons un coup d'œil sur la répartition départementale de l'indice céphalique, nous voyons que parmi les indices céphaliques les plus élevés de la France figurent un certain nombre de ces départements du nord-est; exemple: Meuse (indice 85); Meurthe-et-Moselle (85,6); Haute-Marne (86,8); Haute-Saône (87,4); Vosges (86,7); Doubs (86,1); Jura (88,2). Ces départements associent donc à une grande taille une brachycéphalie très accusée. Cela voudrait-il dire que nous sommes là sur un territoire avancé de la race dinarique ? Nous n'avons pas assez de documents pour une telle affirmation. D'ailleurs, les cartes de la couleur des cheveux et des yeux ne confirmeraient guère cette supposition. Dans tous les cas, on peut constater que tous ces départements dont la population a le crâne arrondi sont beaucoup moins touchés par le cancer que les départements précédemment examinés où les hommes ont le crâne allongé.

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[1] Eug. Pittard, déjà cité.

Dans le groupe des départements à mortalité maximum, nous voyons que l'un d'eux fait enclave: le Rhône.

Il y a, pour expliquer ce fait, une raison qui semble bonne. Ce département renferme la ville de Lyon, centre hospitalier très important vers lequel convergent des malades venus de tous les départements voisins.

Mais à cette raison statistique — indiscutable argument — s'en ajoute peut-être une autre, d'ordre ethnique, qui aiderait à comprendre le chiffre élevé du taux de mortalité par cancer de ce département.

* * *

Examinons rapidement les groupes départementaux qui montrent les taux minimum de mortalité par le cancer.

Onze départements ont un taux de mortalité qui n'atteint pas en moyenne 9,4 sur 10.000 habitants. Ils forment une masse relativement compacte dans le centre sud-ouest. Un département est projeté à la périphérie: les Hautes-Alpes.

Ici deux groupes ethniques sont à envisager: l'un de caractère dolichocéphale, l'autre, au contraire, de caractère brachycéphale. Il suffit, pour constater leur réalité, de se reporter aux cartes des indices céphaliques d'après Collignon.

Tout d'abord on peut poser cette question: Les statistiques de cette région sont-elles dignes de créance ? Le taux indiqué pour la mortalité par cancer paraît bien bas comparativement aux départements septentrionaux. J'ai consulté des médecins français qui m'ont dit qu'il n'y avait aucune raison péremptoire de supposer que, dans ces départements, les statistiques médicales donnaient moins de confiance qu'ailleurs. Ont-ils raison ? [1] Je fais remarquer à mon tour qu'à côté de ces départements à minimum de cancer nous en avons d'autres qui renferment des villes importantes, aux services hospitaliers parfaitement organisés: Bordeaux (Gironde), Toulouse (Haute-Garonne), Montpellier (Hérault) et que ces départements périphériques au massif minimum appartiennent à une circonscription géographique qui a, elle-même, un faible taux de mortalité. Est-ce parce qu'elle est habitée par une autre race que celle répandue dans le nord ?

Au surplus, comment expliquer que tous ces départements méridionaux apporteraient à la statistique générale de la France des documents mal recueillis ? Faudrait-il imaginer une entente des statisticiens médicaux dans ce sens [2].

La zone pyrénéenne, le littoral méditerranéen sont peuplés, en grande partie, par des représentants de la race ibéro-insulaire. Pour s'en convaincre, il suffit de se reporter aux cartes de Deniker. Or, tous les départements de cette zone appartiennent au groupe de faible mortalité.

J'ai calculé la moyenne des onze départements qui composent cette bordure; elle est de 12,97. Qu'on veuille bien se rappeler que la moyenne nordique française est 30,63, près de trois fois plus forte ! J'ai l'impression que ce taux de 12,97 est encore artificiellement élevé pour les deux raisons principales que voici: d'abord certains départements des Pyrénées et de la Côte d'Azur sont des lieux où se rendent beaucoup de malades qui viennent y passer le dernier temps de leur vie. Ensuite Marseille (Bouches-du-Rhône),

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[1] Voir une note précédente au sujet du degré de créance des statistiques dans plusieurs départements du centre-sud et du midi.

[2] Il est certain que dans plusieurs des départements composés exclusivement de régions montagneuses, les statistiques médicales ne peuvent recueillir la totalité des cas de cancer. En Suisse, il doit en être de même dans le Valais où nous rencontrons un taux minimum. Avant de conclure définitivement, il faudrait pouvoir être assuré de la véracité des statistiques.

Toulon (Var), Montpellier (Hérault) ont quelques raisons d'offrir, par leurs hôpitaux, des taux élevés. Et Cannes, Nice et Menton expliquent peut-être pourquoi, des onze départements dont il est question, c'est celui des Alpes-Maritimes qui contient la plus forte mortalité.

Or, malgré ces causes qui peuvent créer artificiellement un taux de mortalité élevé, la région occupée par de forts contingents de la race ibéro-insulaire ou méditerranéenne, n'en reste pas moins l'une des moins cancéreuses de la France.

* * *

Jetons maintenant un coup d'œil sur les départements français les plus brachycéphales: 23 départements ont un indice céphalique dépassant 85. Si nous rassemblons ces 23 départements d'après ce seul caractère de l'indice céphalique élevé, nous constatons que la proportion de la mortalité par cancer, pour le groupe entier, est de 14,57 pour 10.000 habitants. Mais ces indices élevés sont répandus depuis la limite orientale du département des Ardennes jusqu'à la limite septentrionale des Hautes-Pyrénées. Or, la répartition de la stature et de la couleur des yeux et des cheveux a montré qu'à peu près vers le milieu de ce groupement géographique se trouve la séparation de deux races, l'une brachycéphale et de haute stature, aux yeux et aux cheveux relativement clairs (?), l'autre également brachycéphale, de taille beaucoup plus petite, aux yeux et aux cheveux relativement foncés.

Comment se comportent ces deux groupements vis-à-vis du cancer ? J'ai calculé le taux de mortalité des sept départements du sud-ouest. Il est de 9,04 alors que le taux général du groupe brachycéphale entier est de 14,57 [1].

Le triangle occidental français comprenant, en gros, onze départements, est peuplé par des habitants en majorité sous-brachycéphales. Trois de ces départements seraient brachycéphales selon la terminologie de Deniker: Ille-et-Vilaine 85; Mayenne 84,10; Vendée 84,47. L'ensemble de ces onze départements expose la moyenne 83,65, indice de sous-brachycéphalie, à la limite. S'il est une région en France qui réclame une étude détaillée de ses éléments ethniques, c'est bien celle-là et l'intérêt de cette étude est extrêmement grand. Il suffit pour en être convaincu de se reporter au mémoire de Collignon sur le département des Côtes-du-Nord.

Les départements de ce triangle, qu'on pourrait appeler le triangle breton, sont peuplés par des habitants à caractères anthropologiques variés. C'est pourquoi les valeurs moyennes exprimées par l'indice céphalique sont loin de nous satisfaire. Il y a eu certainement dans ce coin de terre des mélanges de populations. Nous en prenons conscience lorsque nous examinons les cartes de la coloration des cheveux et des yeux.Les cheveux blonds ou « intermédiaires blonds » sont abondants dans les départements septentrionaux, tandis que la Loire-Inférieure et la Vendée font partie des groupes possédant les cheveux les plus bruns.

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[1] A propos de ces groupes brachycéphales, il est un point sur lequel je veux attirer l'attention. Lorsque nous parlons du taux plus élevé de mortalité de la race nordique, on pourrait croire qu'il s'agit là d'une question de latitude, de climat. Or, à la latitude des départements les plus méridionaux du groupe à taux maximum de mortalité (moyenne 30,63), nous rencontrons des départements dont le taux est relativement faible: Haute-Saône 10,19, Vosges 17,27, Haute-Marne 12,58. D'ailleurs, il serait facile de discuter cette question d'un rapport possible de la latitude et du cancer. Nous y reviendrons dans un chapitre consacré à une vue d'ensemble de l'Europe cancéreuse.

Il n'en reste pas moins — pour terminer cette observation relative au groupe humain le plus brachycéphale — que la race française à crâne arrondi (en grande partie race cévenole) est beaucoup moins touchée par le cancer que la race dolichocéphale de haute stature (race nordique).

La stature de ces onze départements est petite. La plupart d'entre eux ont des tailles moyennes de 1 m. 62 à 1 m. 63. Un seul, l'Orne, atteint 1 m. 65. La moyenne générale est 1 m. 633.

La répartition du cancer dans ces départements présente quelques variations quantitatives. Six d'entre eux appartiennent aux groupes peu contaminés : Manche, Ille-et-Vilaine, Côtes-du-Nord, Finistère, Morbihan, Maine-et-Loire. Aucun d'eux n'est touché dans la proportion des départements peuplés par des hommes appartenant à la race nordique.

Le cartogramme N° 8 nous permet d'avoir quelques idées d'une relation possible entre le cancer et la race, étant bien entendu que nous acceptons comme ayant une valeur comparable les taux de mortalité publiés par les départements.

Les représentants de la race nordique qui, en France, sont restés cantonnés dans les régions où les invasions préhistoriques et historiques les ont conduits, paraissent beaucoup plus touchés par le cancer que les représentants des autres races. Le taux moyen de mortalité pour le groupe de départements peuplés par cette race est de 30,63 pour 10.000 habitants.

Les représentants de la race méditerranéenne (ou ibéro-insulaire, type de l'*Homo meridionalis*) paraissent — nous faisons abstraction du groupe périgourdin — être en France les hommes les moins atteints par le cancer. Le groupe de départements habités par des hommes de cette race ont un taux moyen de mortalité de 13,9 pour 10.000 habitants.

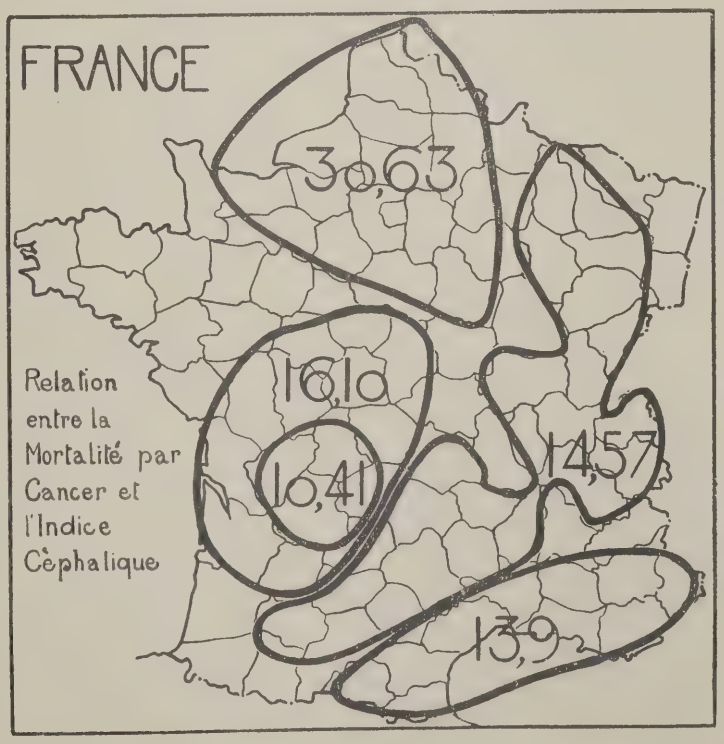
Les représentants de la race celtique ou cévenole *(Homo alpinus)* paraissent occuper pour ce qui touche aux taux de mortalité par cancer en France, une place intermédiaire entre les deux groupes ethniques ci-dessus.

Cartogramme N° 8.

FRANCE.

Relation entre la mortalité par cancer et l'indice céphalique.

Les chiffres indiquent les moyennes des groupes départementaux créés selon les valeurs de l'indice céphalique moyen. (Se reporter à la carte de cet indice, cartogramme N° 3.)



De telles conclusions, si elles devaient être définitives, sans appel, seraient d'une considérable importance. Elles pourraient être, pour les thérapeutistes, le point de départ de recherches que nous imaginons fructueuses. Mais il faut le déclarer bien haut, les documents sur lesquels s'appuient ces conclusions ne méritent pas tous une créance absolue. L'insuffisance de statistiques médicales d'un côté, l'insuffisance de renseignements anthropologiques de l'autre, nous ordonnent la prudence.

Mais si elles sont sujettes à caution, sur certains points, ces conclusions permettent à l'imagination des biologistes de poursuivre sans arrêt leurs recherches.

Conclusions.

Du point de vue qui nous guide, la France est certainement l'un des pays les plus intéressants à étudier. L'état de ses enquêtes anthropologiques, la succession des événements historiques qui se sont déroulés sur son sol, affirment l'un et l'autre la cohabitation de plusieurs éléments ethniques sur son territoire. Il est donc possible de faire d'utiles comparaisons, de confronter entre eux les caractéristiques diverses offertes par ces groupes ethniques variés, de savoir, en particulier, quelles réactions elles opposent aux diverses maladies.

La race nordique *(Homo europaeus)*, race germanique ou kymrique, qui s'installa dans les départements septentrionaux par suite des invasions préhistoriques et historiques, y est restée généralement cantonnée. Elle a naturellement pénétré dans d'autres parties de la France, comme elle a été elle-même, en bien des points, pénétrée par les représentants d'autres races, mais elle apparaît néanmoins cohérente dans les départements de la France du Nord.

La race brachycéphale dite celtique ou cévenole de Deniker *(Homo alpinus)* représente aussi une masse relativement homogène; nous avons vu sa répartition.

Les autres races de moindre importance numérique — race ibéro-insulaire ou méditerranéenne *(Homo meridionalis)* et descendants probables des Dolichocéphales paléolithiques et néolithiques du centre sud-ouest — marquent également suffisamment leur présence pour que nous puissions les utiliser pour des comparaisons.

* * *

Par ailleurs, quelle est la valeur scientifique des enquêtes concernant le cancer ?

Nous savons à quel point il faut se méfier des statistiques médicales de certains pays. En est-il de même en France ? Les avis sont partagés. Mais lorsque nous étudions comparativement les diverses parties d'un pays, l'important c'est que les enquêtes régionales soient considérées comme de valeur égale. Mais celles-là mêmes sont-elles toutes acceptables ? Je crois qu'il y aurait lieu de mettre à part un certain nombre de départements du centre sud-ouest; ceux dont les statistiques médicales accusent des taux minima de cancer. Les renseignements qui nous parviennent à l'égard des statistiques de plusieurs de ces départements montrent que ces statistiques sont sujettes à caution, difficilement utilisables pour l'œuvre que nous poursuivons.

La carte de la répartition du cancer en France montre de très grandes variations quantitatives de cette maladie. Certains départements sont très touchés, d'autres presque indemnes. En laissant de côté la comparaison de département à département, trop sujette à des causes d'erreurs, mais en constituant des groupes de départements où les causes d'erreurs dans les divers sens se neutralisent plus facilement, nous constatons que la race nordique est celle qui, ainsi que nous pouvions le penser par des études antérieures, paie le plus lourd tribut à la maladie. Les autres races viennent très loin derrière elle.

Parmi les taux relativement élevés de mortalité que présentent certains départements n'appartenant pas en majorité à la race nordique, il en est plusieurs dont l'aggravation de taux est probablement due à la présence d'une quantité plus ou moins grande de représentants de cette race, mais cette quantité est impossible à préciser.

Si la race nordique apparaît comme la plus touchée par le cancer, par contre la race méditerranéenne montre les taux de mortalité les moins élevés. Nous faisons, en parlant des taux de mortalité, abstraction du groupe périgourdin, chez qui le taux de mortalité est particulièrement faible. Mais nous n'osons pas utiliser pour une petite circonscription géographique des statistiques médicales sur lesquelles planent des doutes, pour les comparer sainement à celles d'autres régions.

Les représentants de la race celtique ou cévenole *(Homo alpinus)* semblent occuper une place intermédiaire entre les deux groupes ci-dessus.

Il y aurait donc en France — ce n'est là bien entendu qu'une conclusion provisoire — des taux de mortalité par cancer qui, racialement, s'échelonneraient dans l'ordre décroissant que voici: 1 race nordique, 2 race celtique, 3 race méditerranéenne.

Mais de même que nous ne pouvons pas délimiter exactement le territoire des diverses races qui occupent la France, de même, il est impossible de nettement délimiter, géographiquement, le taux de la mortalité cancéreuse. Nous travaillons avec des approximations. Mais ces approximations mêmes sont, pour le but final de nos recherches, pleines d'encouragements.

Maintenant, pour ce qui concerne l'avenir de ces recherches en France, recherches qu'il faudra prolonger dans le temps et dans l'espace, il ne reste plus qu'à souhaiter deux choses: un renouvellement d'entrain pour les enquêtes anthropologiques; une organisation serrée des enquêtes médicales.

Les analyses anthropologiques nous permettront de voir plus clair dans la répartition des races, base solide pour des recherches de toute nature, médicales ou autres.

Des statistiques médicales qu'on ne pourrait plus discuter nous permettraient de moins errer, de moins hésiter sur la route.

II. ÉTUDE PRÉLIMINAIRE COMPARATIVE SUR LA RÉPARTITION DES RACES ET DES TAUX DE LA MORTALITÉ PAR CANCER EN SUISSE

Par le professeur Eugène PITTARD.

La répartition géographique du cancer en Suisse a déjà été l'objet de recherches étendues et nous avons sur ce pays d'excellents renseignements, notamment une carte publiée par le Bureau fédéral de statistique, marquant les subdivisions cancéreuses comme, je crois, aucun Etat ne l'a fait [1]. D'autre part, grâce à ces connaissances relativement exactes, on a tenté d'établir des rapports entre certaines maladies, comme le goître et le cancer [2], entre certaines conditions géologiques ou climatiques et le cancer [3], etc. Nous possédons ainsi pour l'un des deux facteurs que nous mettons en présence — taux de la mortalité par cancer — de très bons documents. Malheureusement, il faut l'annoncer tout de suite, nous ne pourrons pas en dire autant de l'autre facteur : les caractères ethniques de la population suisse; de ceux-là nous ne savons pas grand'chose.

LISTE DES CANTONS DE LA SUISSE

arrangés selon la numérotation employée dans les cartogrammes.

1. Genève
2. Vaud
3. Neuchâtel
4. Fribourg
5. Valais
6. Berne
7. Soleure
8. Bâle-Ville
9. Bâle-Campagne
10. Argovie
11. Lucerne
12. Unterwald-Nidwald
13. Unterwald-Obwald
14. Uri
15. Tessin
16. Grisons
17. Glaris
18. Schwyz
19. Zoug
20. Zurich
21. Schaffhouse
22. Thurgovie
23. Appenzell, Rhodes extérieures
24. Appenzell, Rhodes intérieures
25. St-Gall

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[1] Voir: *a*) Les travaux du Dr CARRIÈRE, directeur du Service fédéral de l'hygiène publique de la Confédération Suisse; entre autres: *Le cancer en Suisse*, extrait du « Bulletin mensuel de l'Office international d'hygiène publique », T. XVI, année 1924, fascicule N° 10; *b*) A. RENAUD: *Quelques renseignements statistiques sur le cancer en Suisse de* 1901 *à* 1920, « Revue médicale de la Suisse romande », 1923: *c*) Carte: Les décès par suite du cancer calculés proportionnellement à la population, d'après les résultats moyens des années 1901-1910.

[2] O. STINER: *Der Krebs und die Frage seiner Beziehungen zum endemischen Kropf*. Sonderabdruck aus der « Schweizerischen Medizinischen Wochenschrift », 1924.

[3] BARTH: *La fréquence du cancer et la nature du sol et des eaux en Suisse*, « Revue médicale de la Suisse romande », Genève, 1914.

I. Quelques faits généraux concernant les statistiques du cancer.

Mortalité sans spécification d'âges.

Le cancer est très inégalement répandu en Suisse. La belle carte publiée par le Bureau fédéral de statistique et donnant les décès par suite de cancer calculés proportionnellement à la population d'après les résultats moyens des années 1901-1910 le démontre avec netteté (carte N° 9). Il existe en Suisse un gros massif cancéreux dans le centre nord-est de la Confédération. Il forme un groupement compact qui englobe les cantons de Lucerne, d'Unterwald, de Schwytz, de Zoug, de Glaris, d'Appenzell et presque tout St-Gall, Thurgovie, une grande partie du canton de Zurich et de celui de Schaffhouse. A côté de ce massif, quelques îlots fortement cancéreux sont disséminés au travers du pays; sur la rive droite du lac de Neuchâtel, le long de l'Aar moyen et terminal, dans le canton des Grisons.

D'autre part, le minimum cancéreux ne constitue pas un groupement dont l'homogénéité soit comparable à celui du maximum. Le canton du Valais entier, une partie de celui du Tessin et des Grisons, la partie centrale du canton de Berne et quelques districts de la région jurassienne, quelques districts vaudois sont, sur la carte, les circonscriptions demeurées en clair.

Ce taux minimum de mortalité appelle, pour ce qui concerne certaines régions, quelques observations. Il est possible, par exemple, que le taux minimum du Valais soit le fait de statistiques insuffisantes dues à l'état topographique et économique spécial de ce canton, exclusivement alpin et pauvre, où l'appel aux médecins est certainement moins fréquent qu'ailleurs. Mais en est-il de même du Tessin ? On peut hésiter quand nous voyons les districts montagneux relativement peu peuplés et économiquement peu favorisés de ce canton présenter des taux plus élevés que les districts des régions les plus accessibles, ayant des centres urbains importants, comme Bellinzone, Locarno, Lugano, où le nombre des médecins est plus grand qu'ailleurs, même dans les cantons où les déclarations statistiques doivent, *a priori*, avoir plus de précision.

Une observation de même ordre peut être faite pour ce qui touche aux taux cancéreux de certains districts du canton de Berne et du canton de Vaud, comme, pour ce dernier, Aigle, Vevey, Lausanne. A propos du district de Lausanne, on peut encore remarquer que c'est justement ce territoire qui renferme les hôpitaux les plus importants du canton, — ceux-ci devraient donc concentrer les déclarations du cancer — et que, malgré cela, son taux de mortalité, comme district, est peu élevé.

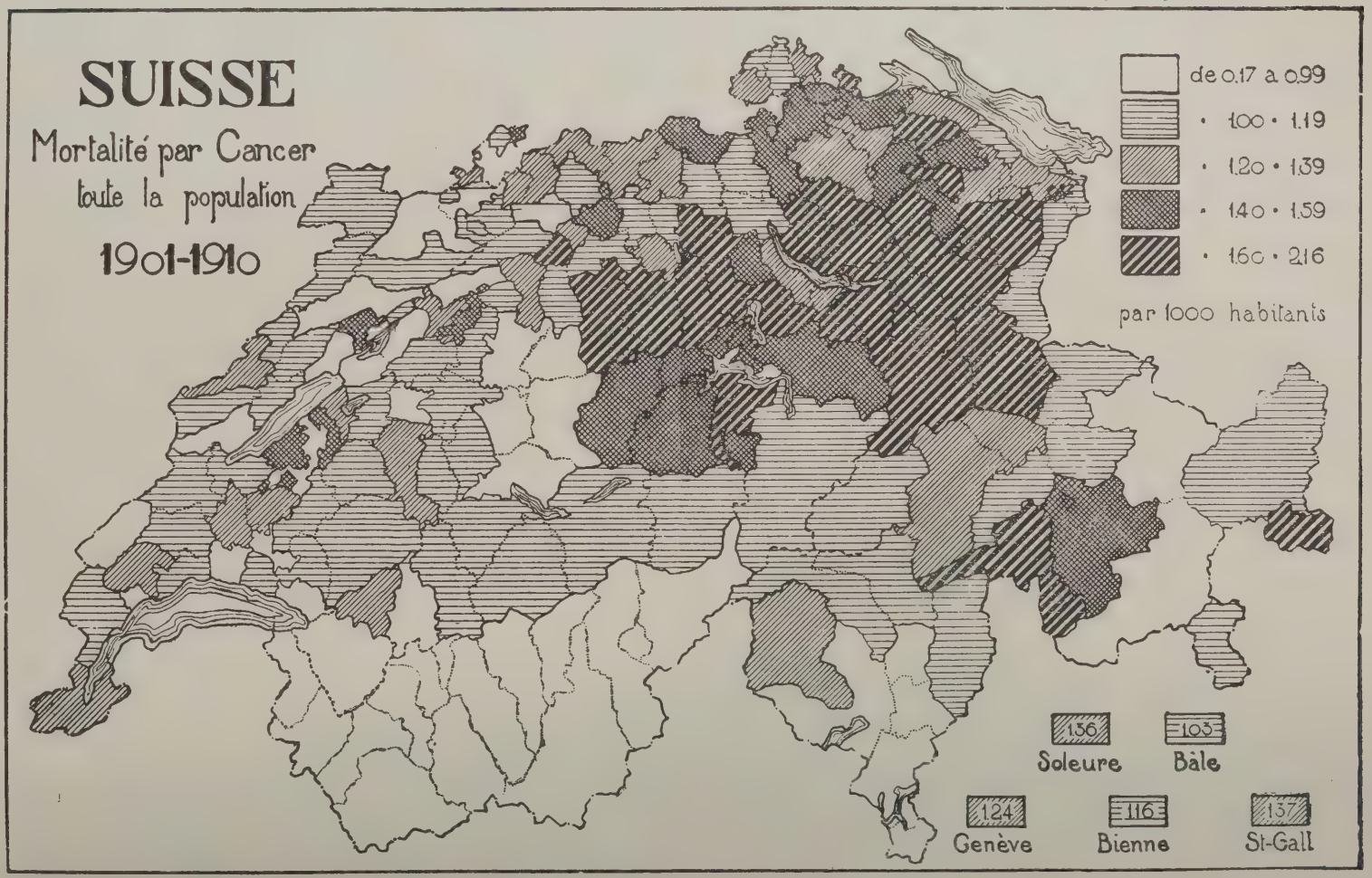
Les statistiques suisses passent, à juste titre, pour être parmi les plus sérieuses. La répartition des résultats, non seulement par cantons — et nous avons parfois sous ce terme de petites circonscriptions — mais encore par districts, donne aux documents placés sous nos yeux un plus grand intérêt d'interprétation.

La carte dont je viens de parler a été établie sur les statistiques 1901-10. J'ai sous les yeux les résultats d'une statistique beaucoup plus considérable comprenant les années 1901-20. Ces dix années ajoutées ne changent pas grand'chose aux faits généraux. Le Valais demeure à part dans son isolement minimum : les cantons peu hachurés sur la carte montrent, ici également, des taux peu élevés. Il y aurait bien cependant quelques petits changements

Cartogramme N° 9.

SUISSE.

Répartition géographique de la mortalité par cancer parmi toute la population, période 1901-1910.



à opérer dans les hachures de la carte nouvelle qu'on pourrait établir; le canton de Schwytz, par exemple, passe de 14,5 à 16. Mais, pour ce qui concerne les ensembles, on ne constate pas beaucoup de différences. Nous verrons tout à l'heure les détails.

Ces deux statistiques ont été obtenues avec les notations des mortalités cancéreuses de tous les âges. Elles méritent, avant que de passer à l'examen des taux provenant de personnes âgées de 40 ans et plus, de nous arrêter encore un instant.

Un coup d'œil superficiel sur la carte invoquée et sur les tableaux de statistiques pourrait faire croire que les cantons alpins sont moins touchés par la mortalité cancéreuse que les cantons jurassiens, ou certaines parties du plateau (exception pour le massif cancéreux du centre nord-est de la Suisse). A voir les choses de plus près, il n'en est pas ainsi. Sans doute les massifs méridionaux des Alpes présentent des taux relativement bas; mais chez eux mêmes, nous constatons des exceptions: le Val Maggia, dans le Tessin, les districts d'Albula, de Münsterthal et d'Hinterrhein, d'Imboden, de Glenner dans les Grisons. Au nord du Saint-Gothard, il existe les puissantes zones montagneuses de l'Unterwald, de Schwytz, de Glaris, d'une partie de St-Gall, de Zoug, de Lucerne, et ce sont ces régions-là qui possèdent les taux les plus élevés. Cette opposition de deux massifs alpins présentant d'aussi grandes différences dans les taux de mortalité pourrait nous inciter à tenter des recherches sur les milieux géologiques et géographiques et sur la qualité du sous-sol. Mais nous éliminons de notre horizon toute interprétation autre que celle que nous avons en vue aujourd'hui.

Le plateau suisse se présente très inégalement touché par le cancer. Des districts blancs succèdent à des districts fortement colorés ou à des couleurs intermédiaires. Et il en est de même de la zone jurassienne.

Une dernière observation: les cantons, puis les districts citadins, sont-ils plus touchés que les cantons et les districts ruraux ?

Pour bien des endroits, on pourrait croire le contraire. Bâle-Ville, qui n'est guère qu'une cité, et Genève ont moins de mortalité cancéreuse que les deux Unterwald, Zoug, Schwytz, les deux Appenzell. Et pourtant ces deux grandes villes ont des hôpitaux importants, lesquels, *a priori*, devraient augmenter les taux de mortalité. Le district de Berne, malgré ses services hospitaliers, a un taux plus faible que celui de Büren; le district de Zurich, qui renferme la plus grande ville de la Suisse, est le moins touché de tous les districts de ce canton. Nous pourrions faire, en parcourant la surface de la Suisse, encore d'autres observations de cet ordre.

Les enquêtes sur la mortalité par cancer à partir de 40 ans et selon les districts.

Les Etats dans lesquels nous avons étudié le développement du cancer en fonction de la race ayant généralement fourni les statistiques des personnes décédées à partir de 40 ans, nous allons utiliser une statistique de même qualité pour la Suisse. Pour le moment, nous ne ferons aucune comparaison entre la Suisse et les autres pays, mais seulement des comparaisons entre les cantons suisses.

Voici d'abord le tableau de la mortalité cancéreuse par canton, les sexes étant séparés.

Tableau N° 1.

MORTALITÉ PAR SUITE DU CANCER, PAR CANTONS.
PÉRIODE DE 1918 A 1922.

Sur 10.000 personnes de 40 ans et au-dessus (population de résidence) sont décédés par suite du cancer:

Cantons	Hommes	Femmes	Total
Zurich	48,1	40,8	44,1
Berne	40,6	34,4	37,4
Lucerne	57,8	42,9	50,2
Uri	42,8	31,9	37,4
Schwytz	58,7	52,9	55,3
Unterwald-Obwald	57,0	28,4	42,2
Unterwald-Nidwald	66,8	55,4	60,8
Glaris	55,5	41,0	47,5
Zoug	59,2	44,4	51,5
Fribourg	46,2	44,6	45,4
Soleure	48,8	37,6	42,9
Bâle-Ville	43,7	40,7	42,2
Bâle-Campagne	40,0	36,9	38,4
Schaffhouse	43,4	38,4	40,7
Appenzell, Rhodes extérieures	40,1	47,0	43,7
Appenzell, Rhodes intérieures	53,0	44,5	48,6
St-Gall	46,9	40,0	43,2
Grisons	36,8	34,2	35,5
Argovie	51,3	39,9	45,2
Thurgovie	48,0	45,5	46,7
Tessin	30,7	32,0	31,4
Vaud	35,7	38,3	37,0
Valais	20,2	20,4	20,3
Neuchâtel	38,4	39,4	38,9
Genève	38,1	37,9	38,0
SUISSE	43,4	38,4	40,8

Certains cantons possèdent une mortalité féminine supérieure à la mortalité masculine: Appenzell extérieur, Tessin, Valais, Neuchâtel, Vaud. La plupart des autres cantons ne présentent pas, entre les sexes, pour la mortalité par cancer, de très grandes différences quantitatives. Cependant, il faut signaler quelques chiffres comparatifs extraordinaires. Il y a, entre les sexes, une différence de 15 unités à Lucerne, de 11 à Uri, de 29 à Unterwald-Obwald, de 11 à Unterwald-Nidwald, de 14 à Glaris, de 15 à Zoug, de 11 à Soleure, de 12 dans le canton d'Argovie. Des différences aussi étendues sont à retenir car il n'y a, pour la Suisse entière, qu'une différence de 5 unités en faveur des femmes: il meurt dans le pays, par suite du cancer, 38,4 femmes sur 10.000 habitants, tandis qu'il meurt 43,4 hommes (à partir de 40 ans). Il faudrait pouvoir interpréter de pareilles variations. On peut déjà remarquer que les cantons chez lesquels on observe de tels écarts entre les sexes appartiennent à la masse cancéreuse du centre nord-est dont il a été déjà question.

Pour aider à voir plus clair, nous avons sérié (tableau N° 2) les taux de mortalité — les sexes étant réunis — selon leur valeur décroissante.

Tableau N° 2.

Taux moyen de mortalité par cancer (sexes réunis) dès l'age de 40 ans, en Suisse. Valeurs cantonales arrangées selon l'ordre décroissant.

Unterwald-Nidwald	60,8
Schwytz	55,3
Zoug	51,5
Lucerne	50,2
Appenzell (Rh. intérieures)	48,6
Glaris	47,5
Thurgovie	46,7
Fribourg	45,4
Argovie	45,2
Zurich	44,1
Appenzell (Rh. extérieures)	43,7
St-Gall	43,2
Soleure	42,9
Bâle-Ville	42,2
Unterwald-Obwald	42,2
Schaffhouse	40,7
Neuchâtel	38,9
Bâle-Campagne	38,4
Genève	38
Berne	37,4
Uri	37,4
Vaud	37
Grisons	35,5
Tessin	31,4
Valais	20,3

Quatre d'entre eux dépassent 50: Unterwald-Nidwald, avec le chiffre considérable 60,8; puis Schwytz 55,3, Zoug et Lucerne.

Neuf cantons ont un taux qui dépasse 45. A l'autre extrémité de la série, nous trouvons le canton du Valais avec un chiffre relativement très bas: 20,3 — trois fois moins élevé que celui d'Unterwald-Nidwald. Mais nous ne savons pas exactement quelle confiance on peut accorder à ce dernier résultat[1]. Après le Valais, les cantons les moins touchés sont le Tessin, les Grisons, puis Vaud, Uri, Berne, Genève. On retiendra la place occupée par Vaud, Berne et Genève. Notamment ce dernier canton qui n'est guère qu'une grande ville.

Voici maintenant, résumés en un court tableau, les taux minima et maxima présentés par les divers cantons dans lesquels ces oppositions quantitatives avaient quelque intérêt à être montrées. Ils sont rangés selon l'ordre croissant des minima. Il y a parfois dans le même canton (il n'a pas besoin d'être très étendu) des écarts considérables. Le plus remarquable, à cet égard, est celui d'Argovie (44 unités). Viennent ensuite ceux de St-Gall et du Valais (28). Ces très grands écarts dans les taux de mortalité appartiennent à des régions diverses de la Suisse, et non plus au seul massif cancéreux du centre nord-est.

[1] Il semble que le canton du Valais devrait être mis à part.

Tableau N° 3.

TAUX MINIMA ET MAXIMA PRÉSENTÉS PAR LES DISTRICTS DES DIVERS CANTONS.

Cantons	Minima	Maxima
Valais	8,6	36,8
Tessin	20,4	36,6
Schwytz	24,8	57,3
Grisons	24,8	50,7
Vaud	27,6	44,7
Berne	27,8	54,5
Soleure	31,7	49,4
Fribourg	32,6	55,–
St-Gall	32,9	60,6
Zurich	34,9	53,4
Neuchâtel	35,1	43,6
Schaffhouse	35,5	50,9
Argovie	36,1	80,1
Appenzell (Rhodes extérieures)	36,4	49,4
Bâle-Campagne	36,9	39,2
Lucerne	40,8	63,2
Thurgovie	41,8	61,2
Moyenne générale	*31,1*	*52,15*

Après ce premier examen et à l'aide de la statistique de la mortalité par cancer des personnes âgées de 40 ans et au-dessus, selon les districts et durant la période de 1918–1922, j'ai dressé la carte de cette mortalité (carte N° 10). Il est intéressant de la comparer à celle établie sur les bases des statistiques 1901–1910 pour tous les décès cancéreux, sans spécification d'âges.

Nous avons déjà constaté le défaut de parallélisme complet entre les résultats de ces deux statistiques. Celle qui ne comprend que les décès dès 40 ans montre parfois de profondes modifications d'avec l'autre. Il serait, j'imagine, du plus haut intérêt de faire, avec la discrimination qu'offre la distribution des taux par districts, une étude comparative de ces deux cartes. Je remets cette étude à plus tard. Je fais simplement remarquer que les modifications qu'on peut relever en examinant ces deux cartes ne sont pas toujours dans le même sens. Certains districts passent de la catégorie des taux élevés à des catégories de moindre valeur, ou inversement.

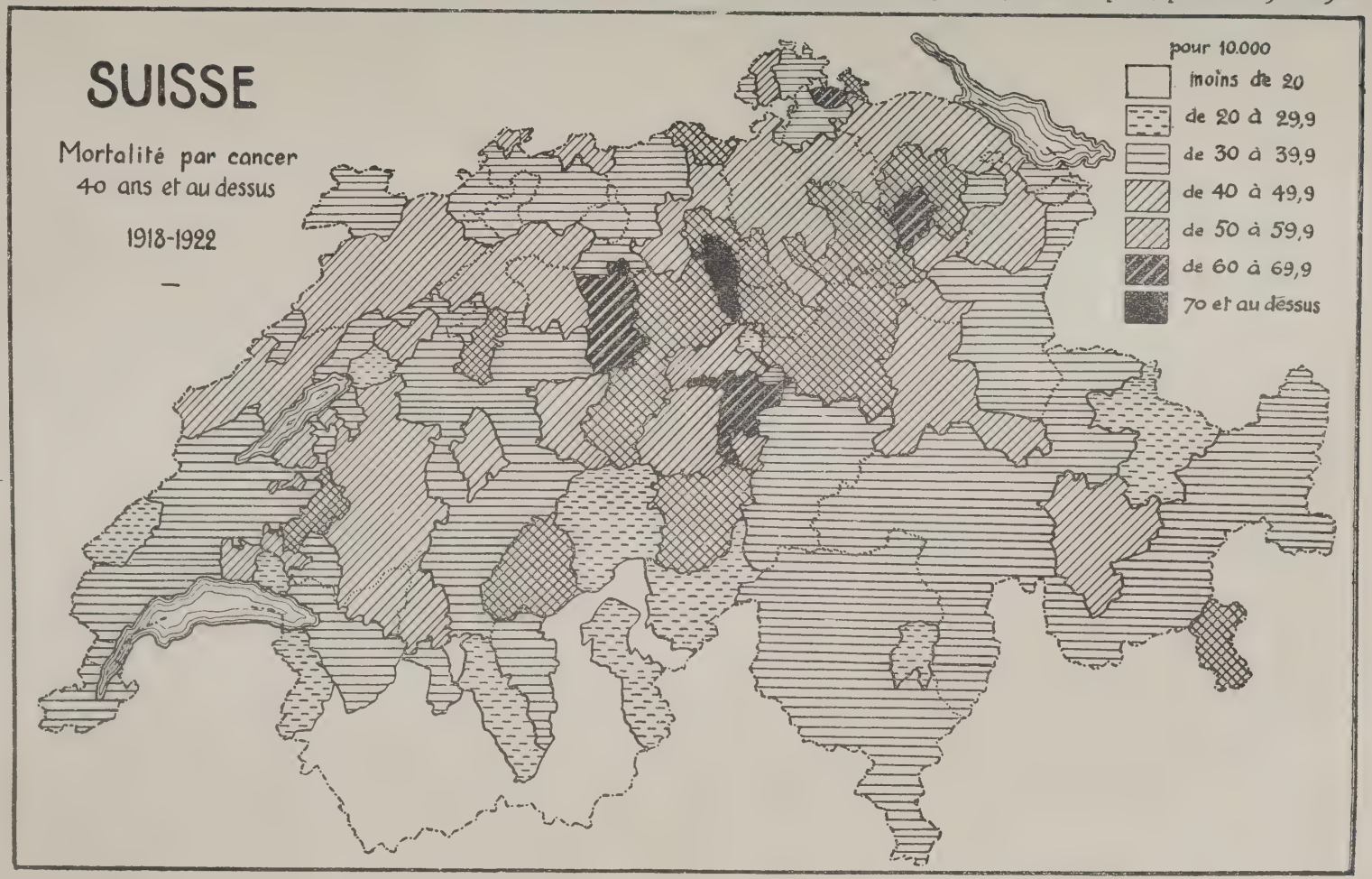
Mais ce qui ressort, *grosso modo*, de la carte nouvelle comme une très nette confirmation des enquêtes antérieures, c'est l'existence dans le centre nord-est de la Suisse d'un massif cancéreux important. Un morceau de ce massif, le district de Muri (canton d'Argovie), atteint le taux formidable de 80,1 décès pour 10.000 personnes, laissant loin derrière lui les autres taux élevés comme Unterwald-Nidwald, Willisau (canton de Lucerne), Toggenburg-Alt (canton de St-Gall), Diessenhofen (canton de Thurgovie)[1]. Le contour de ce massif n'est pas tout à fait le même que celui de la carte de 1901–1910.

[1] Il faut remarquer qu'au point de vue des résultats statistiques, certains districts de faible étendue et de population peu nombreuse peuvent, dans certaines circonstances, grossir artificiellement les taux de mortalité de telle ou telle région. Je reprendrai un jour, sous une autre forme que celle des districts, la répartition des taux cancéreux.

Cartogramme N° 10.

SUISSE.

Répartition géographique, par districts, de la mortalité par cancer parmi la population âgée de 40 ans et plus, période 1918-1922.



En dehors du canton du Valais au sujet duquel nous avons réservé notre opinion quant à la valeur de ses statistiques, nous trouvons dans cette nouvelle carte quelques taux peu élevés: la Riviera (canton du Tessin), Ober-Landquart (canton des Grisons), La Vallée (canton de Vaud), Interlaken (canton de Berne). En voyant une telle subdivision des statistiques, poussée si loin dans l'ordre géographique, un anthropologiste ne peut que vivement regretter la pauvreté des documents morphologiques et descriptifs qu'il aura à employer. A cette belle carte de géographie médicale, l'anthropologie ne peut pas superposer une carte ethnologique d'égale valeur.

Lorsqu'on divise la Suisse en ses deux masses linguistiques principales, on constate que la masse de langue germanique est autrement plus touchée par le cancer que la masse de langue latine. Un seul coup d'œil sur la carte suffit pour marquer cette différence. Mais nous savons que l'étiquette linguistique doit être vérifiée avant que de croire qu'elle peut être appliquée sur un groupe ethnique pour le caractériser définitivement.

Tout à l'heure, nous utiliserons cette répartition quantitative du cancer en tenant compte des deux cartes dont il vient d'être question.

* * *

Il paraît nécessaire, à l'aide du tableau N° 2, de faire encore quelques remarques.

Dans les neuf cantons qui tiennent la tête des taux de mortalité, nous ne trouvons aucune de ces localités dont l'importance des hôpitaux soit telle qu'elle agisse, vis-à-vis des malades, comme des cités tentaculaires. Au contraire, des villes importantes comme Zurich, St-Gall, Bâle-Ville, où les centres hospitaliers sont très développés, figurent dans les groupes intermédiaires de la sériation. Genève, Berne et Lausanne, chose intéressante, appartiennent au groupe minimum. La concentration des malades en certains points de plusieurs cantons suisses ne place pas artificiellement ces cantons dans des catégories à taux particulièrement élevés. C'est là une constatation fort importante que nous utiliserons ailleurs. Quand nous voyons Genève, Berne et Vaud, malgré qu'ils possèdent des centres hospitaliers étendus, figurer dans les cantons à taux de mortalité relativement faibles, nous avons le droit de chercher les raisons de cette position particulière.

A priori, ne peut-on pas imaginer que ces cantons, s'ils ne possédaient pas de grands hôpitaux, s'ils n'avaient pas de ce fait des services médicaux bien organisés et des statistiques exactes, devraient montrer des taux de cancer — ce seraient leurs taux réels — plus bas encore que ceux qui leur sont alloués ?

J'ai cherché, par l'examen des districts, à savoir si les cantons à forte mortalité cancéreuse présentaient des taux élevés sur toute leur étendue, ou s'ils possédaient des lieux d'exceptions dans un sens ou dans l'autre. Cette manière de faire nous conduira à serrer de plus près le problème des causes, surtout dans les endroits où les raisons d'augmentation — ou de diminution — artificielles ont toutes chances d'être sinon éliminées, du moins fortement diminuées.

Dans le canton de Schwytz, sur six districts, quatre ont des taux compris entre 52 et 57. Deux font exception: Gersau 32 et Küssnacht 24,8. Serait-ce que les malades cancéreux de ces localités rapprochées de la ville de Lucerne se font soigner dans les hôpitaux de cette ville et y augmentent artificiellement le taux de mortalité ? Mais je constate que le taux du district de Lucerne est le plus petit des taux de ce canton. Alors ? D'autre part, dans le canton même de Schwytz, la ville de ce nom et son hinterland viennent immédiatement à la suite des deux taux minima que nous venons de signaler.

Le canton de Lucerne comprend cinq districts. Leurs taux de mortalité s'échelonnent de 40,8 (Lucerne même) à 63,2 (Willisau). Les autres s'écartent peu de la moyenne cantonale. Le district de Willisau est à l'ouest du canton. Dans la statistique des décès sans

spécification d'âges, ce district est moins atteint que celui de Sursee, son voisin à l'est [1], lequel, dans la statistique actuelle, dès 40 ans, présente également un taux élevé (58,8).

On se demande comment il se fait que Lucerne — chef-lieu et, au surplus ville d'étrangers — qui possède ainsi diverses raisons pour avoir un taux élevé de mortalité, montre un chiffre inférieur à celui de tout le reste du canton.

Sept districts divisent le canton de Thurgovie. Les taux extrêmes de mortalité sont 61,2 à Diessenhofen, et 41,8 dans le district de Kreuzlingen. Nous pouvons faire ici la même observation qu'à propos du canton de Lucerne. Le district qui renferme la capitale, Frauenfeld, est un des moins touchés par le cancer. Il vient immédiatement après le district à taux minimum, Kreuzlingen. Les deux districts à taux extrêmes bordent l'un le lac de Constance, l'autre le Rhin.

Le canton de Fribourg montre aussi de grandes variations dans les taux de mortalité selon les districts: minimum Veveyse (32,6); maximum Glâne (55). Le district de la Sarine, dans lequel se trouve la capitale, a un taux de 47,4. Le taux minimum du district de la Veveyse est à retenir, car le district vaudois de Vevey, qui est au sud, est aussi une circonscription faiblement touchée par le cancer. Le district à maximum de la Glâne, par contre, est voisin du district vaudois de Moudon, assez fortement touché.

Pour déceler un phénomène, cette division en districts est beaucoup plus favorable que la division en cantons. Un tel procédé permet d'envisager la création de régions géographiques, composées avec des districts appartenant administrativement à des cantons différents. Alors nos essais d'interprétation ont quelque chance de voir plus clair que lorsqu'on nous apporte les grossières moyennes des cantons.

Le district de la Veveyse compte un peu moins d'habitants par kilomètre carré que celui de la Glâne. Une telle différence, entre les deux districts, des taux de mortalité, ne peut pas chercher, dans le fait de ces différences d'agglomérations, une explication.

Le canton d'Argovie nous montre une différence de taux, entre le minimum et le maximum, extraordinaire. Elle est plus grande que du simple au double. La mortalité moyenne du district de Zofingue est de 36,1, celle du district de Muri de 80,1. Ce dernier, dans les statistiques sans spécification d'âges, présente déjà un taux maximum. Après le district de Muri, le district de Bremgarten fournit un taux très élevé: 58,9. Ceux qui pensent trouver dans des conditions extérieures les causes efficientes du cancer incline-raient-ils à croire que ces deux districts doivent cette maladie au fait qu'ils concentrent chez eux le travail de la paille et du crin ?

Parmi les cantons dont le taux de mortalité est relativement faible, il en est un ou deux — comme le Valais, le Tessin, les Grisons — pour lesquels on peut croire que les statistiques manquent de précision [2]. Mais en manquent-elles davantage que celles des cantons non moins montagneux comme ceux d'Unterwald et de Schwytz qui figurent parmi les taux maximum ?

Le canton du Valais se compose de 13 districts. Le taux le plus faible de mortalité est fourni par le district d'Hérens (8,6), et le plus fort par le district de Sion (36,8). La différence entre ces deux taux est énorme [3]. Parmi les autres taux peu élevés, nous voyons,

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[1] Il serait très intéressant, et peut-être fort utile, de comparer les statistiques, pour tous les districts, des taux de mortalité sans spécification d'âges et ceux à partir de 40 ans.

[2] On pourra consulter, pour connaître la valeur des statistiques médicales en Suisse et les valeurs réelles qu'il faut attribuer aux taux de certains cantons, le rapport du Dr Carrière, directeur du Service fédéral de l'hygiène publique de la Confédération, présenté à la Commission du cancer de la Société des Nations.

[3] Le très petit taux du district d'Hérens s'expliquerait peut-être par le petit nombre d'habitants qu'il renferme.

dans l'ordre croissant, les districts d'Entremont, de Martigny, de Conthey. La ville de Sion, avec ses hospices et ses hôpitaux, aurait-elle concentré les malades cancéreux venus de tous les districts du canton ? Aurait-elle surtout drainé les malades du Val d'Hérens qui est justement à côté et en face d'elle, de l'autre côté du Rhône ?

Il est tout à fait regrettable que nous ne puissions faire plus de fond sur les statistiques du Valais, car c'est un des cantons parmi les mieux connus quant aux caractères anthropologiques de ses habitants, peut-être même le mieux connu, puisqu'il l'est jusque dans de petites circonscriptions géographiques.

Le canton du Tessin présente son taux minimum dans le district de la Riviera (20,4) et son taux maximum dans celui du Valle Maggia (36,6).

J'ai fait remarquer ailleurs que les villes tessinoises des bords des lacs, si recherchées par les malades — comme en France Nice, Cannes ou Menton — ne possèdent pas des taux élevés de cancer. En dehors du district de la Riviera, ce sont les districts de Locarno et de Lugano — où sont établis de si nombreux hôtels — qui figurent parmi les moins contaminés. On peut s'étonner de ce fait, comme on peut s'étonner de constater que le maximum du taux cancéreux se trouve dans le Valle Maggia [1].

Les quatorze districts du canton des Grisons font l'objet — au moins pour plusieurs d'entre eux — de quelques observations. Nous nous arrêtons davantage à ce canton parce qu'il est considéré comme renfermant une certaine quantité d'individus appartenant à la race dinarique. Or celle-ci, d'après des observations antérieures [2], paraît être très peu atteinte par le cancer.

Dans la carte des décès par cancer sans spécification d'âges, les districts les moins touchés du canton des Grisons étaient ceux de l'Ober-Landquart et de la Maloja; les plus touchés, ceux du Münsterthal et d'Hinterrhein. Dans la statistique que nous analysons présentement, ces derniers districts ne montrent pas des taux élevés. Quant à l'Ober-Landquart et à la Maloja, ils disjoignent leur ancien voisinage. Le district d'Ober-Landquart continue à avoir le plus petit taux de tout le canton (26,1). Celui de la Maloja serait beaucoup plus élevé (37), mais il est encore dépassé par cinq autres districts. Le taux maximum est présenté par le district de la Bernina.

Lorsque tous les groupes d'âges sont considérés, ce district n'est pas un des plus atteints. Après ce district, c'est celui de l'Albula qui présente le taux le plus haut.

Comment, dans un canton comme celui des Grisons, interpréter de telles différences ? Nous n'avons pas affaire à des territoires où d'importantes cités peuvent drainer les malades et augmenter artificiellement le taux de mortalité de ces régions. Sur tout le cours de l'Inn, dans la Haute-Engadine, dans l'Ober-Landquart — qui renferme Davos, centre médical important — dans ces lieux où se rendent tant de malades, parmi lesquels il pourrait y avoir, tout de même, un certain pourcentage de cancéreux, nous n'avons que des taux intermédiaires équivalant à peu près à la moyenne du canton. Nous examinerons plus tard le canton des Grisons en fonction de ses caractères anthropologiques.

Sur la carte des décès par cancer sans spécification d'âges, le canton de Vaud fait figure d'habit d'arlequin: des districts à taux moyen alternent avec des districts à faible taux. D'après la statistique de la mortalité dès l'âge de 40 ans, c'est le district de la Vallée qui montre le taux minimum (27,6); après celui-là, c'est le district de Lavaux (28,1). Le district à maximum est le Pays-d'Enhaut (44,7) puis celui d'Oron (41,4). Le district de La Vallée est un pays d'agriculture et d'industries domestiques importantes; celui de Lavaux est couvert de vignobles. Le Pays-d'Enhaut, montagnard, et le territoire d'Oron sont presque exclusivement des régions agricoles.

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[1] Ce val ne renferme qu'une faible population. C'est peut-être la cause de ce taux élevé qui ne serait alors qu'une apparence statistique.

[2] Eug. PITTARD: *Etude sur la répartition géographique et ethnique du cancer*, déjà cité.

Le district et la ville de Lausanne, centre médical important, a aussi un taux élevé, le troisième dans l'ordre décroissant. Le district de Vevey, bordant le lac, où il y a de nombreux hôtels et où viennent séjourner tant de malades atteints d'affections diverses, n'a qu'un taux moyen de mortalité (37,4), égal à celui du canton.

Le canton d'Uri qui vient, dans l'ordre de mortalité croissante, après le canton de Vaud, n'est pas administrativement subdivisé. Le taux inscrit est celui du canton tout entier. On peut s'étonner de trouver ici une si faible mortalité relative, surtout quand on sait que les cantons voisins, — sauf Berne et les Grisons — ont des taux beaucoup plus élevés. Ce taux relativement faible provient-il de statistiques insuffisantes ? Ou le canton d'Uri bénéficie-t-il des conditions qui assurent à ses deux voisins de l'ouest et de l'est une place favorisée parmi les cantons suisses ?

Le canton de Berne, qui comprend trois régions géographiques principales: les Alpes, le Plateau et le Jura, dont la population parle deux langues, dont les origines ethniques ne sont pas les mêmes partout, dont les conditions de vie sociale sont variées, mériterait une étude approfondie.

Il est divisé administrativement en 30 districts. Les trois districts à taux maximum sont Ober-Hasle (54,5), Frutigen (53,1), et Fraubrunnen (50,5); les trois districts à taux minimum sont Erlach (27,8), Interlaken (28,4) et Aarberg (31,5). Entre les districts d'Ober-Hasle et d'Erlach il y a une différence qui va du simple au double.

On peut être étonné de tels contrastes quand on constate que le district d'Ober-Hasle, région de haute montagne, a pour voisin le district d'Interlaken (minimum) qui ne lui cède en rien sous le rapport topographique mais qui a la moitié moins de cancéreux, et qu'à côté de ce dernier, le district de Frutigen est de nouveau une région à taux maximum!

Le district d'Erlach (minimum) se trouve entre les lacs de Neuchâtel et de Bienne, voisin du district d'Aarberg.

Il y a quelque chose de déconcertant dans de telles constatations.

Le canton de Berne renferme quelques villes d'une certaine importance; Berne, Bienne, des districts abondamment industriels et des districts exclusivement agricoles. Le taux moyen des décès dans les districts de Berne (centre hospitalier important) est de 33,1; celui de Bienne (district industriel), 33,7. Ils sont tous deux très au-dessous des districts montagnards de l'Oberland, lesquels ne pourraient pas invoquer, des raisons comme Berne pour expliquer leurs taux élevés.

J'ai mis à part quatre districts du Jura bernois de langue française et j'ai calculé le taux de leur mortalité. Je trouve 43,25, chiffre beaucoup plus élevé que celui de la mortalité moyenne du canton tout entier (37,4). On meurt donc davantage dans le Jura, à partir de 40 ans, que dans le reste du canton (exception bien entendu des taux très élevés).

Cette constatation est à rapprocher du paragraphe où nous avons constaté que la Suisse latine renferme moins de cancéreux que la Suisse allemande. Le Jura bernois est en grande partie un territoire de langue française. Et c'est la région où, dans le canton de Berne, on meurt le plus du cancer.

Nous reprendrons plus tard l'examen de plusieurs de ces districts.

Le canton de Genève présente aussi un taux de mortalité peu élevé: 38. Il n'y a pas de différence marquante entre ses trois divisions administratives: ville de Genève, rive droite (du Rhône) et rive gauche. La rive gauche a le taux le plus élevé (38,3). Peut-être cette région doit-elle cette légère élévation à la présence, sur son territoire, d'un grand hôpital ?

Nous ne voulons pas poursuivre cette analyse pour tous les cantons. Elle nous entraînerait trop loin. Les exemples que nous avons donnés montrent à quel point on constate des variations de taux, dans le même canton, en passant d'un district à un autre. Les districts exclusivement montagnards ou ruraux présentent souvent un taux plus élevé que les districts citadins possédant d'importants centres hospitaliers.

Est-ce à dire qu'il est impossible, en Suisse, de discerner, à l'aide d'une quantité plus ou moins grande de districts, des zones plus nettement cancéreuses et d'autres ne connaissant que très peu la maladie ?

J'ai esquissé deux répartitions générales du cancer; l'une comprenant les taux allant de 43,2 à 60,8; l'autre, les taux de 38,9 à 20,3, et j'ai, selon cet ordre, dressé la carte de la Suisse (carte N° 11).

Nous retrouvons dans cette carte, *grosso modo*, le massif centre nord-est que la carte des décès sans spécification d'âges nous a appris à connaître. Il n'a pas exactement la même dimension. Et il faut y ajouter, à l'ouest de la Suisse, le canton de Fribourg qui ne figurait pas avec un pareil taux dans la carte que nous venons de rappeler. D'un autre côté, nous voyons avec cette nouvelle disposition, disparaître plusieurs régions à taux relativement forts; ces derniers sont remplacés par des taux moyens ou faibles.

Avant de terminer ce chapitre je veux mettre en regard de la Suisse entière, et des taux des cantons, les districts citadins les plus importants:

Tableau N° 4.

TAUX MOYEN DE MORTALITÉ A PARTIR DE 40 ANS (SEXES RÉUNIS).

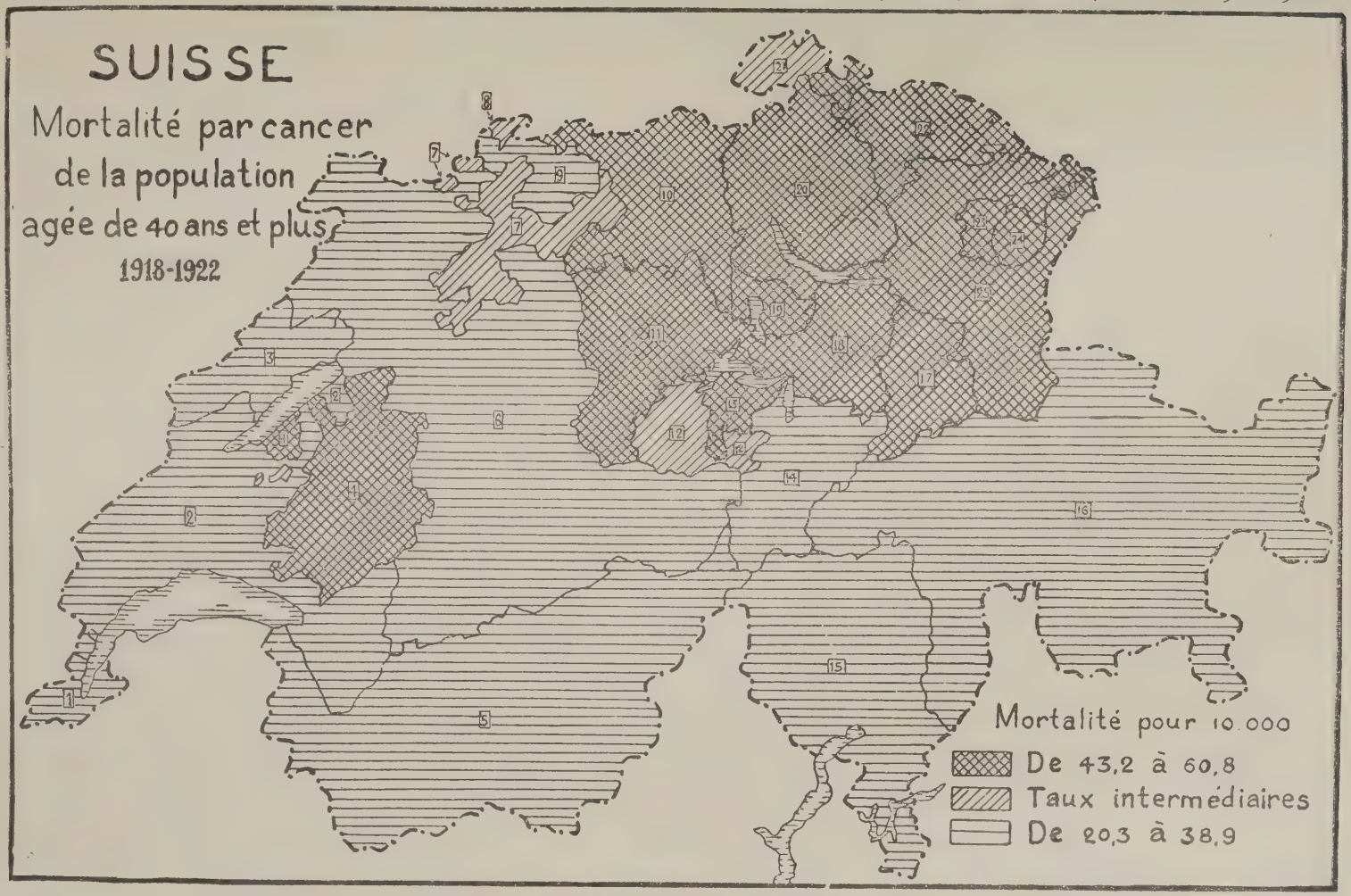
Moyenne de la Suisse entière: 40,8.

Taux moyen des cantons		Taux moyens des principaux districts urbains	
Zurich	44,1	Zurich	42,3
		Winterthur	42,1
Berne	37,4	Berne	33,1
		Bienne	33,7
Lucerne	50,2	Lucerne	40,8
Fribourg	45,4	Sarine (Fribourg)	47,4
Soleure	42,9	Soleure	44,1
		Olten	49,4
Bâle-Ville	42,–		
Schaffhouse	40,7	Schaffhouse	39,2
St-Gall	43,2	St-Gall	42,4
Argovie	45,2	Aarau	39,8
		Baden	43,2
Thurgovie	46,7	Frauenfeld	43,4
Tessin	31,4	Bellinzone	31,8
		Locarno	30,7
		Lugano	30,6
Vaud	37,–	Lausanne	40,3
		Morges	38,6
		Vevey	37,4
Valais	20,3	Sion	36,8
		Brigue	24,2
		Sierre	23,9
Neuchâtel	38,9	Neuchâtel	36,7
		La Chaux-de-Fonds	35,1
		Le Locle	42,–
Genève	38,–	Rive gauche	38,3

Cartogramme N° 11.

SUISSE.

Régions à taux minimum *et à* taux maximum de décès par cancer, *à partir de 40 ans (sexes réunis). Période 1918-1922.*



Ce petit tableau est fort intéressant. On y constatera que presque tous les centres urbains ont un taux moyen inférieur à celui des cantons auxquels ils appartiennent. Ne font exception que la ville de Fribourg (district de la Sarine), les districts citadins de Soleure et d'Olten, pour le canton de Soleure; les districts citadins de Lausanne, Morges et Vevey, pour le canton de Vaud; ceux de Brigue, Sion et Sierre pour le canton du Valais; le district de la rive gauche pour le canton de Genève (différence inappréciable). Il ne semble pas résulter de ce tableau — ainsi que nous l'avons déjà supposé — qu'en Suisse les centres urbains — ici les lieux ou les hospices, hôpitaux et les médecins sont en plus grand nombre —, augmentent artificiellement, du fait d'une concentration des malades ou d'une statistique mieux ordonnée, le taux de la mortalité de leur région.

D'autre part, j'ai calculé la moyenne des 26 villes suisses indiquées ci-dessus. (Elle est de 37,9, c'est-à-dire inférieure au taux moyen de la Suisse entière (40,8).

Je sais bien qu'une importante constatation comme celle-ci, qui élimine certaines idées préconçues au sujet des taux citadins de mortalité, ne peut pas être valable telle qu'elle pour les autres pays. Je veux bien qu'elle n'a pas de valeur comparative absolue. Mais je me demande tout de même s'il ne serait pas possible de l'étendre à des Etats dont les statistiques sont considérées comme exactes. Je rappelle qu'en France j'ai signalé un fait assez rapproché de celui-là, en comparant plusieurs départements ayant de grands centres hospitaliers à des départements voisins qui ne présentaient pas cette particularité.

Cette vue d'ensemble très générale de la répartition du cancer en Suisse, nous permet maintenant de passer à l'étude des caractères anthropologiques de la population.

2. Les caractères anthropologiques principaux de la Suisse.

Malgré ce qu'*a priori* on pourrait imaginer, la Suisse est un pays dont on est loin de connaître les caractères anthropologiques. A plusieurs reprises déjà, ont été nommées des commissions qui devaient entreprendre des enquêtes ethnologiques dans tout le pays. Jusqu'à présent elles n'ont pas mené à chef leurs projets. On ne peut guère citer comme résultat de ce devoir collectif que les cartes de la couleur des yeux et des cheveux publiées par Kollmann [1] et, secondairement, par Studer (canton de Berne). Il est à souhaiter que ce pays, dont l'intérêt anthropologique saute aux yeux des moins informés, sorte de cet état d'apathie à tous égards préjudiciable. Cet exorde est pour dire que, malgré les apparences, nous ne pourrons apporter ici que des renseignements fragmentaires.

Au premier coup d'œil, on peut croire, à cause de ses trois langues nationales — diversité linguistique qui se complique encore dans le canton des Grisons — que la Suisse est un complexe ethnique composé, surtout, de trois éléments humains. Il faut se souvenir que la langue parlée par une population n'a souvent aucun rapport avec la qualité ethnique de celle-ci. En Suisse, le canton du Valais est un exemple à citer d'une telle disjonction. Après avoir parlé une langue celtique, les Valaisans, conquis par Rome, acceptèrent la langue des vainqueurs. Les invasions germaniques — de langue germanique — venues des cantons allemands voisins, ont imposé une nouvelle langue. Une partie importante du Valais parle aujourd'hui le français. Or, ces populations qui ont subi quatre autorités linguistiques, n'ont pas changé pour cela leurs caractéristiques morphologiques.

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[1] Dr Kollmann: *Die statistischen Erhebungen über die Farbe der Augen, der Haare und der Haut in den Schulen der Schweiz.* (Denkschriften der Schweizerischen Naturforschenden Gesellschaft, 1881-82.)

La taille en Suisse.

Nous la connaissons principalement grâce aux recrutements militaires. En Suisse peut-être plus qu'ailleurs, il faut prendre la précaution, lorsqu'on utilise de tels documents de s'en tenir exclusivement à une seule statistique. J'ai sous les yeux les chiffres fournis par les recrutements militaires de deux groupes d'années 1884-1891 et 1908-1910. Pour chaque canton, les moyennes qui représentent chacun de ces groupes d'années sont différentes. La taille a notablement augmenté en Suisse entre ces deux périodes. Nous choisirons, pour les discussions à venir, la statistique la plus récente.

L'étude de la taille en Suisse est d'un très grand intérêt. A cause de la variété qu'elle présente en passant d'une région à une autre, on peut faire, à son sujet, toutes espèces de raisonnements. Comment, par exemple, expliquer les très petites tailles — pour un Etat européen — des habitants des deux demi-cantons d'Appenzell (1 m. 605 et 1 m. 620) ? Comment expliquer, en plein cœur montagneux de la Suisse centrale, les tailles relativement hautes des demi-cantons d'Unterwald (1 m. 672)? Peut-être pouvons-nous interpréter ces différences en faisant appel à l'Histoire? Ce n'est pas un hasard de statistiques et ce n'est pas non plus une influence mésologique — dont on ne verrait pas l'explication — qui, dans l'enquête sur les types blonds aux yeux bleus, place, dans le canton d'Appenzell, une moyenne de 10% de ce type, tandis qu'il n'y en a que 4% dans le canton d'Unterwald !

Nous avons divisé les 25 statures cantonales en trois groupes: celles qui sont au-dessous de la moyenne (1 m. 65), celles qui s'échelonnent de 1 m. 65 à 1 m. 67 et celles qui dépassent ce dernier chiffre. La carte suivante (carte N° 12) rend très visible la répartition de ces trois types de stature.

On y constatera que les petites tailles forment un groupement, assez peu dense d'ailleurs, dans l'est de la Suisse (le canton des Grisons excepté); elles constituent une enclave à l'ouest: le canton de Fribourg. La presque totalité des recrues suisses ont une taille comprise entre 1 m. 65 et 1 m. 67.

Quatre îlots de haute taille se remarquent: Bâle-Ville, Genève, les deux Unterwald et Schaffhouse. Pour Bâle-Ville et Genève, l'explication de ces hautes tailles n'est pas difficile ! Il suffit de faire jouer le facteur de l'influence citadine, élévatrice de la stature partout [1].

Reste alors le canton d'Unterwald qui constitue un îlot d'individus très grands, planté au centre de la Suisse. Avec le canton d'Appenzell, nous avons donc deux îlots de caractères absolument opposés, l'un dont la taille des hommes n'est que de 1 m. 61, tandis que l'autre atteint 1 m. 68; sept centimètres de différence en comparant la taille moyenne des deux régions qui sont à une si petite distance l'une de l'autre, il y a de quoi surprendre !

Ces grandes tailles moyennes d'Unterwald et ces petites tailles moyennes d'Appenzell sont-elles des moyennes fictives obtenues à l'aide de nombres exceptionnels ?

En utilisant la formule $\frac{\textit{tailles inférieures à 1 m. 56}}{\textit{tailles supérieures à 1 m. 70}}$, nous trouvons les fractions suivantes: Unterwald-Obwald, 5/43; Unterwald-Niedwald 3/32; Appenzell, Rhodes extérieures 15/15; Appenzell, Rhodes intérieures 19/8, qui sont une démonstration bien nette de la réalité des grandes et des petites tailles dans ces deux groupes de cantons. En réunissant les deux Unterwald, la proportion des tailles atteignant et dépassant 1 m. 70 est de 39,3 %.

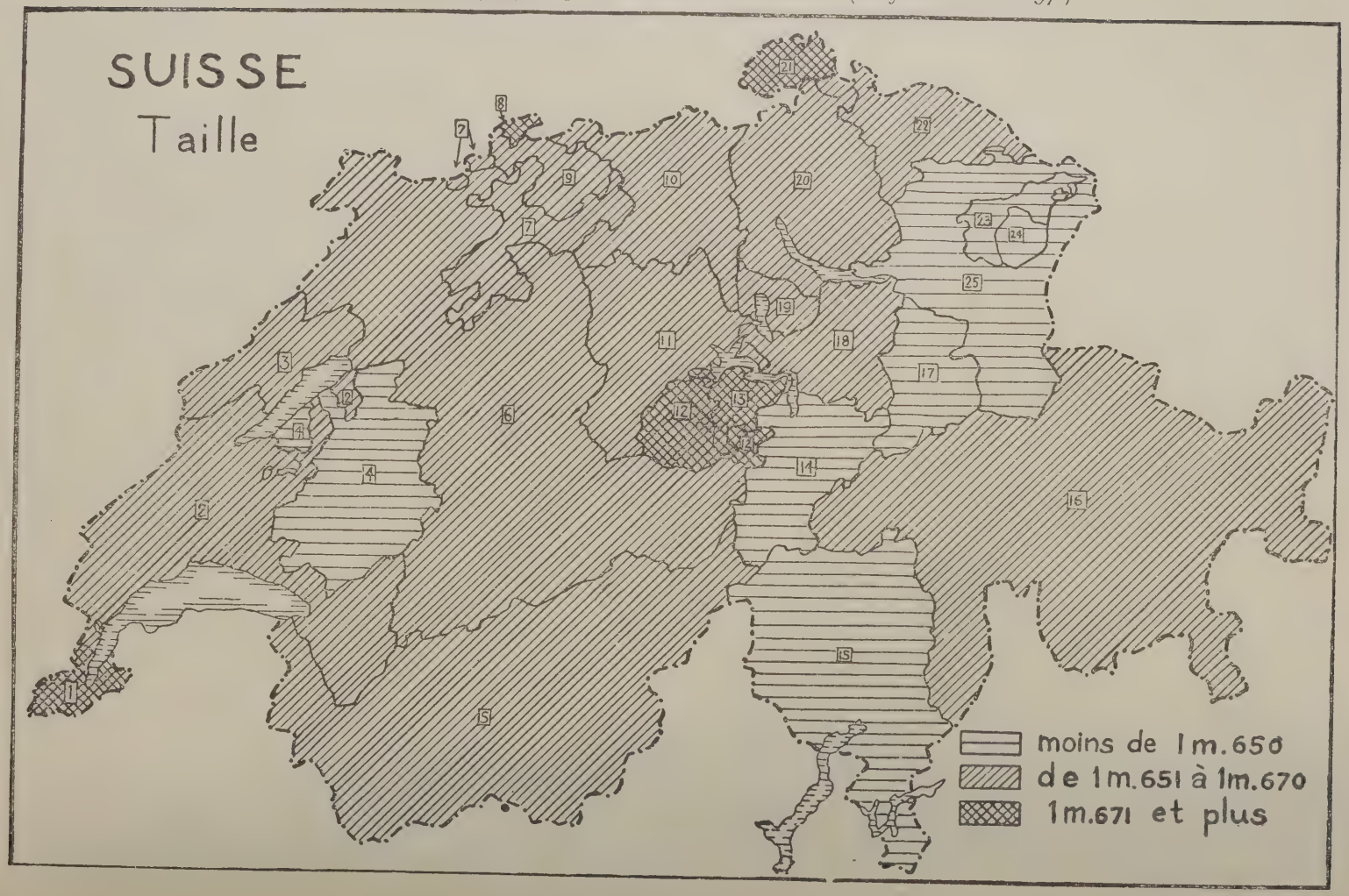
Nous examinerons les détails de l'enquête sur la taille lorsque nous établirons les comparaisons entre les caractères morphologiques et la présence du cancer. Alors nous passerons à l'examen des districts. Pour le moment, nous pouvons constater que le massif

[1] Je me suis expliqué là-dessus dans divers mémoires. Voir Eug. PITTARD: *Les races et l'histoire*, Paris, 1925.

Cartogramme N° 12.

SUISSE.

Répartition géographique, par cantons, *de la taille*. (Moyenne: 1 m. 657.)



cancéreux du centre nord-est de la Suisse ne paraît pas occupé par des populations dont une stature élevée serait une des caractéristiques morphologiques. En additionnant la taille des cantons qui composent ce massif (Unterwald et aussi les deux Appenzell exceptés) je trouve seulement, comme moyenne, 1 m. 655. Reste à voir, encore une fois, ce que nous montreront les districts.

* * *

Après la constatation de ces faits généraux, il est nécessaire de jeter un coup d'œil sur la répartition de la taille selon les districts (carte N° 13). Nous aurons une indication plus précieuse que celle donnée par les distributions globales par cantons. Nous ne signalerons que les districts dont la stature des habitants est inférieure à la moyenne 1 m. 65 ou dépasse cette moyenne (dès 1 m. 66).

Canton de Zurich: Trois districts sur onze ont une taille inférieure à la moyenne et trois dépassent celle-ci. Le district à plus petite taille est celui de Bulach (1 m. 643); celui de plus grande taille est Zurich (1 m. 676); puis viennent ceux de Meilen (1 m. 666) et Wintherthour (1 m. 663).

Canton de Berne: Parmi ses 30 districts, il y en a 13 qui sont au-dessous de la moyenne et 5 qui sont au-dessus. Nous relevons quelques districts de taille particulièrement petite: Schwarzenbourg (1 m. 619), Signau (1 m. 630), puis Seftigen, Thun et Trachselwald (1 m. 639). Les districts à taille élevée sont d'abord ceux de Berne et de Bienne, puis les districts du Jura de langue française, Porrentruy et Moutier (1 m. 664 et 1 m. 665), enfin celui d'Ober-Hasle en plein Oberland (1 m. 662). Ce dernier chiffre est à retenir.

Canton de Lucerne. Un district au dessous de la moyenne: Willisau (1 m. 642); un au-dessus, Lucerne (1 m. 664).

Canton de Schwytz. 1 m. 644 (Höfe), 1 m. 667 (Schwytz).

Canton de Fribourg. Aucun district n'arrive à 1 m. 66, pas même celui de la Sarine, dans lequel se trouve la ville même de Fribourg. Trois districts sont au dessous de 1 m. 65.

Canton de Soleure. Ce canton a une taille moyenne relativement élevée (1 m. 662). Sur 10 districts, il y en a sept qui atteignent et dépassent 1 m. 66. Un seul district est de petite taille: Kriegstetten, 1 m. 648.

Canton de Schaffhouse. Tous les districts de ce canton sont, comme ceux de Soleure, au dessus de 1 m. 66.

Canton d'Appenzell. Nous signalons de nouveau dans ces deux demi-cantons la très petite taille relative des hommes qui les habitent. Les tailles des districts s'échelonnent de 1 m. 60 à 1 m. 623. Ce sont les plus petites statures de toute la Suisse.

Canton de Saint-Gall. Dans ce canton, qui enclave Appenzell, nous ne constatons guère que de petites statures. Deux districts seulement (sur 15) atteignent 1 m. 651 (Sargans) et un dépasse la moyenne: 1 m. 673 (Saint-Gall).

Canton des Grisons. Sur les 14 districts de ce canton, six dépassent 1 m. 66 et trois n'arrivent pas à la moyenne de 1 m. 65.

Canton d'Argovie. Il est de haute taille moyenne. Sur onze districts, six dépassent 1 m. 66. Un seul, Bremgarten, est au-dessous de la moyenne (1 m. 648). Pourquoi ce canton présente-t-il cette caractéristique générale de posséder une pareille stature, relativement élevée ? Serait-ce que nous avons chance d'y rencontrer de nombreux représentants de la race nordique ?

Canton de Thurgovie. Petite stature moyenne. Aucun district n'arrive à 1 m. 66.

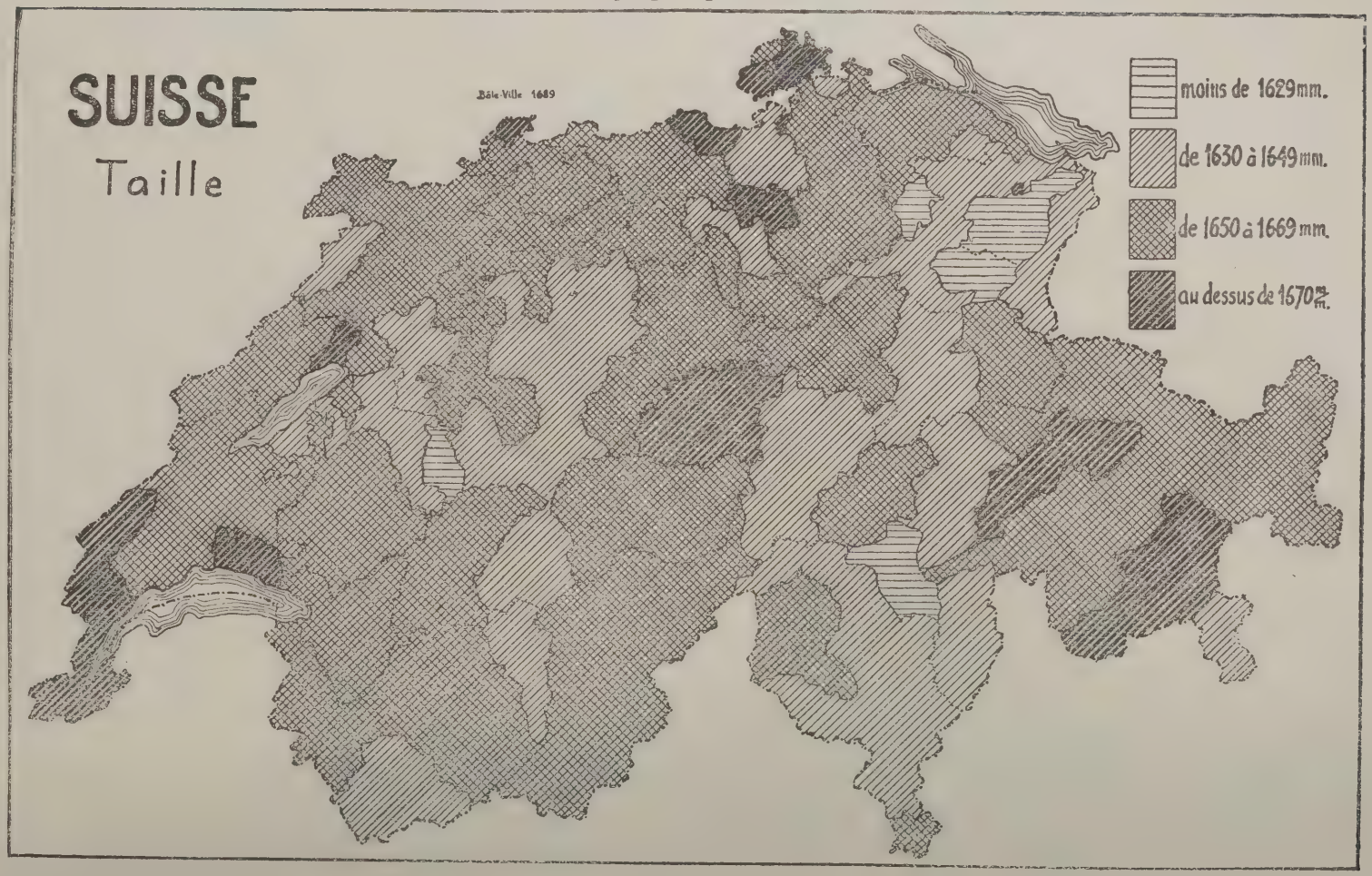
Canton du Tessin. Sur huit districts, six n'arrivent pas à montrer une taille moyenne de 1 m. 65. Un seul, Valle Maggia, atteint 1 m. 66.

Canton de Vaud. Taille moyenne dépassant 1 m. 66. Sur les 19 districts de ce canton, quatorze atteignent et dépassent 1 m. 66. Aucun n'a une taille inférieure à 1 m. 65.

Cartogramme N° 13.

SUISSE.

Répartition géographique, par districts, *de la taille*.



Canton du Valais. Deux districts n'arrivent pas à 1 m. 65, sept atteignent et dépassent 1 m. 66.

Canton de Neuchâtel. Aucun district n'a une taille inférieure à 1 m. 65. Trois d'entre eux (sur six) atteignent et dépassent 1 m. 66.

Ce rapide examen des districts nous montre la variété des statures en Suisse. Ce pays renferme aussi bien des régions à très petite taille comme les deux Appenzell, certains districts du canton de Saint-Gall, que des districts à haute stature, Genève, Bâle-Ville, certains districts vaudois (La Vallée: 1 m. 682), ou Grisons (Maloja: 1 m. 681).

Les districts exclusivement citadins de haute taille comme Bâle-Ville et Genève, ne présentent, pour l'étude que nous entreprenons ici, qu'un assez maigre intérêt. C'est qu'aussi le développement naturel de la taille ne s'y effectue pas dans les mêmes conditions que dans les districts ruraux ou montagnards.

Nous allons constituer, avec les tailles de mêmes valeurs, divers groupes de façon à les comparer en mettant en regard les taux de mortalité par cancer afférent à chacun de ces groupes de tailles (par districts). Le tableau N° 5 est composé à l'aide des statures les plus petites. Cinq cantons seulement figurent dans cette liste. Aucun district de langue française n'est indiqué; il y a deux districts de langue italienne, le reste est de langue allemande.

Tableau N° 5. EXAMEN DE LA TAILLE EN FONCTION DES TAUX CANCÉREUX.

Cantons	Districts	Statures dépassant 1 m. 660 Taille	Taux de mortalité	
			les deux sexes	hommes
Appenzell. . . .	Rhodes intérieures	160,5	48,6	53,–
	Mittelland.	161,6	42,1	30,5
	Vorderland	161,9	36,4	37,4
	Hinterland	162,3	49,4	47,4
St-Gall	Toggenburg, Alt.	162,0	60,6	64,6
	Toggenburg, Ober	162,9	36,4	38,1
	Gaster	163,5	47,4	50,–
	Rheintal, Ober.	163,8	36,4	29,–
	Toggenburg, Nied	163,1	46,6	48,4
	Toggenburg, Unter	163,7	54,–	61,2
	Wil.	163,9	51,2	58,9
Berne	Schwarzenburg.	161,9	34,3	46,2
	Seftigen.	163,9	47,5	55,8
	Signau	163,–	40,3	44,9
	Thun	163,–	35,6	35,7
	Trachselwald	163,9	34,–	35,9
Fribourg	Sense.	163,8	44,6	49,4
Tessin	Bellinzone.	163,7	32,3	19,1
	Blenio	162,9	31,8	20,–
	Moyennes	—	42,60	43,45

Dans un autre tableau, nous avons rassemblé (tableau N° 6) toutes les statures dépassant 1 m. 660. On constatera combien ce second arrangement contient un plus grand nombre de districts que le précédent. A voir la colonne des taux de décès, il semble que les districts de haute stature de la Suisse allemande soient plus touchés par le cancer que les districts de la Suisse française.

Tableau N° 6. EXAMEN DE LA TAILLE EN FONCTION DES TAUX CANCÉREUX.

Cantons	Districts	Statures dépassant 1 m. 660 Taille	Taux de mortalité	
			les deux sexes	hommes
Zurich	Meilen	166,6	50,–	54,2
	Winterthour	166,3	42,1	45,3
	Zurich	167,6	42,3	45,4
	Berne	166,6	33,1	34,9
	Bienne	166,5	33,7	34,7
Berne	Moutier	166,4	44,9	53,4
	Ober-Hasle	166,2	54,5	60,7
	Porrentruy	166,5	39,7	45,–
Lucerne	Lucerne	166,4	40,8	44,5
Schwytz	Schwytz	166,7	52,8	58,5
Unterwald	Obwald	167,4	42,2	57,–
	Nidwald	167,1	60,8	66,8
Soleure	Balsthal Gäu	166,3	46,1	55,1
	Bucheggberg	166,–	31,7	32,6
	Dorneck	166,8	33,3	34,4
	Gösgen	166,9	39,4	47,3
	Lebern	166,3	40,2	44,5
	Olten	166,9	49,4	61,7
	Soleure	167,8	44,1	48,4
Bâle	Ville	168,9	41,4	43,–
	Campagne	167,3	59,4	64,1
	Arlesheim	166,3	38,2	37,3
	Sissach	166,–	38,8	42,7
Schaffhouse	Klettgau, Ober	167,9	46,5	60,–
	Klettgau, Unter	167,6	35,3	32,1
	Reiath	167,3	39,2	53,1
	Schaffhouse	167,1	39,2	41,1
	Schleitheim	166,7	44,7	38,9
	Stein	166,7	50,9	48,3
St-Gall	St-Gall	167,3	42,4	45,1
Grisons	Albula	166,2	48,2	54,5
	Heinzenberg	167,–	31,6	39,2
	Hinterrhein	166,1	30,9	42,2
	Landquart, Ober	166,9	26,8	26,5
	Maloja	168,1	37,–	37,8
	Plessur	167,2	35,8	41,3
Argovie	Aarau	166,8	39,8	50,4
	Baden	166,3	43,2	47,5
	Brugg	166,7	37,2	40,2
	Laufenbourg	166,9	38,8	36,6
	Rheinfelden	166,7	40,1	44,7
	Zurzach	167,–	50,3	61,5
Tessin	Valle Maggia	166,–	36,6	31,6
Vaud	Aubonne	166,4	32,2	35,4
	Avenches	166,6	34,6	34,6
	Cossonay	166,2	34,–	30,9
	Grandson	166,1	34,1	39,6
	Lausanne	167,1	40,3	37,8
	La Vallée	168,2	27,6	37,1
	Lavaux	167,8	28,1	23,2
	Morges	166,9	38,6	40,–
	Nyon	167,2	27,6	34,6
	Orbe	166,4	39,–	29,8
	Oron	166,2	41,4	31,2
	Rolle	166,7	32,5	37,3
	Vevey	166,5	37,4	36,7
	Yverdon	166,2	33,7	27,3

Tableau N° 6 *(suite)*. Examen de la taille en fonction des taux cancéreux.

Cantons	Districts	Statures dépassant 1 m. 660 Taille	Taux de mortalité	
			les deux sexes	hommes
Neuchâtel	Boudry	166,–	41,6	43,–
	La Chaux-de-Fonds	166,4	35,1	31,7
	Neuchâtel	167,3	36,7	35,6
Genève	Ville	168,1	37,9	39,9
	Rive droite	168,7	37,1	35,8
	Rive gauche	168,4	38,3	37,6

Moyenne de la Suisse allemande: 46,48.
Moyenne de la Suisse française: 34,84.
Dans un septième tableau, j'ai sorti tous les districts dont la stature moyenne dépasse 1 m. 67 et je les ai classés en deux sous-groupes: Suisse allemande, Suisse française.

Tableau N° 7.

Statures dépassant 1 m. 67 dans la Suisse alémanique (et rhétique) et dans la Suisse romande, et taux cancéreux.

Cantons	Districts	Taille	Taux de mortalité hommes
	Suisse alémanique (et rhétique).		
Zurich	Zurich	167,6	45,4
Unterwald	Obwald	167,4	57,–
	Nidwald	167,1	66,8
Soleure	Soleure	167,8	48,4
Bâle	Ville	168,9	43,–
	Campagne	167,3	64,1
Schaffhouse	Klettgau	167,9	60,–
	Klettgau, Unter	167,6	32,1
	Reiath	167,3	53,1
	Schaffhouse	167,1	41,1
St-Gall	St-Gall	167,3	45,1
Grisons	Heinzenberg	167,–	39,2
	Maloja	168,1	37,8
	Plessur	167,2	41,8
Argovie	Zurzach	167,-	61,5
	Moyennes	*167,5*	*49,09*
	Suisse romande.		
Vaud	Lausanne	167,1	37,8
	La Vallée	168,2	37,1
	Lavaux	167,8	23,2
	Nyon	167,2	34,6
Neuchâtel	Neuchâtel	167,3	35,6
Genève	Ville	168,1	39,9
	Rive droite	168,7	35,8
	Rive gauche	168,4	37,6
	Moyennes	*167,8*	*36,45*

De l'examen de ces différents tableaux, il semble résulter que, pour la Suisse entière, les hommes de haute taille appartenant à la Suisse alémanique — nous ne disons pas encore de race nordique ou germanique — sont plus souvent atteints par le cancer que les hommes de haute taille de la Suisse française.

Les districts les plus cancéreux et les moins cancéreux de la Suisse examinés en fonction de la taille.

Le district qui possède le taux maximum de mortalité est celui de Muri, dans le canton d'Argovie: 80,1 sur 10.000 personnes âgées d'au moins 40 ans. Ce chiffre est obtenu par les deux moyennes: masculine 86,1, féminine 74,6. Le district de Muri dépasse de bien loin celui de Willisau (Lucerne) qui vient ensuite (63,2).

Quelle peut-être la raison de cette extraordinaire élévation du taux de mortalité à Muri — qui déjà dans la carte des décès par suite de cancer sans spécification d'âges, figurait avec le taux le plus élevé, 2,16 sur 1.000 à côté de son district voisin, Bremgarten, 2,10 (aujourd'hui 58,9).

Nous n'avons malheureusement aucun document anthropologique sérieux pour ces deux circonscriptions. La stature du district de Muri est 1 m. 652, celle de Bremgarten 1 m. 648. Ce sont les deux plus petites tailles des districts argoviens. Mais peut-on inférer quoi que ce soit de ce seul caractère ? D'autant plus que Muri possède une proportion assez élevée de tailles dépassant 1 m. 70 (27 %). Quels sont les individus touchés par le cancer ? Les plus grands ou les plus petits ? Les statistiques mortuaires ne le disent pas.

D'autre part, je ne connais rien des caractères craniens de cette région. Le canton d'Argovie appartient, dans la répartition des types blonds avec yeux bleus, à une zone qui n'en renferme qu'un nombre restreint, de même qu'il ne renferme qu'une quantité relativement modeste de types bruns. Ce district exceptionnel — et son voisin celui de Bremgarten aussi — échappent à nos investigations [1].

Trois autres districts fortement cancéreux existent en Suisse, ceux d'Unterwald-Nidwald (60,8), de Toggenburg-Alt (St-Gall) (60,6), de Diessenhofen (Thurgovie) (61,2). Leurs statures sont respectivement 1 m. 671, 1 m. 620, 1 m. 649. C'est-à-dire que nous avons là des basses et des hautes statures. Les proportions des tailles dépassant 1 m. 70 sont dans le même ordre 32, 15, 27. Unterwald-Nidwald et St-Gall sont des cantons qui ne possèdent qu'un nombre restreint de types blonds; une très petite quantité aussi de types bruns en Unterwald; notablement davantage à St-Gall. Par contre, Unterwald est riche (selon Schwerz) en types à yeux gris et à cheveux blonds (31 à 48 %) [2]. Nous ne connaissons les caractéristiques craniennes que du canton d'Unterwald. Cette région est brachycéphale. En envisageant, *grosso modo*, les choses, nous dirions que le cancer atteint plus fortement les hommes de haute stature et brachycéphales. Mais il atteint avec la même intensité les hommes de petite taille !...

Pour ne pas rester sur cette impression déconcertante, j'ai rassemblé les taux de mortalité du massif centre nord-est dont il a été souvent question. Il est peu différent si nous le composons avec les taux de mortalité dès 40 ans ou avec les taux sans spécification d'âges.

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[1] Il est possible qu'il faille envisager ici un phénomène de statistique obtenu avec de trop petits nombres.
[2] F. Schwerz: *Die Völkerschaften der Schweiz von der Urzeit zur Gegenwart*, Stuttgart, 1915.

Tableau N° 8.

Cantons	Districts	Taux de mortalité à partir de 40 ans	Statures
Lucerne	Entlebuch	50,8	165,3
	Willisau	63,2	164,2
	Sursee	58,8	165,–
	Hochdorf	52,–	165,1
Argovie	Muri	80,1	165,2
	Bremgarten	58,9	164,8
	Zurzach	50,3	167,–
Zoug	Zoug	51,5	165,7
Schwytz	Schwytz	52,8	166,7
	Einsiedeln	55,8	165,7
	Höfe	57,3	164,4
	March	55,8	165,2
Zurich	Meilen	50,–	166,6
	Affoltern	53,4	164,7
	Hinwil	51,4	165,3
	Pfäffikon	51,1	165,4
Thurgovie	Diessenhofen	61,2	164,9
	Münchwilen	54,7	164,4
St-Gall	Wil	51,2	163,9
	Toggenburg, Alt	60,6	162,–
	Toggenburg, Unter	54,–	163,7
	Seebezirk	58,–	164,6
Schaffhouse	Stein	50,9	166,7
	Moyennes	*55,8*	*165,1*

Nous voyons figurer, dans ce tableau des taux maximum cancéreux, une ou deux tailles notablement au-dessous de la moyenne. Dix d'entre elles n'atteignent pas 1 m. 65, quatre dépassent 1 m. 66. Les plus petites tailles sont dans le canton de St-Gall. Elles apparaissent comme un prolongement de cette zone de très petite stature que nous avons trouvée dans le canton d'Appenzell.

La taille moyenne en Suisse est 1 m. 657 — celle de ce massif très cancéreux est 1 m. 651, à peine différente.

Le taux moyen de mortalité cancéreuse en Suisse (dès 40 ans) est 40,8. Ici il est de 55,8.

Le groupe Lucerne, Unterwald, Schwyz, Zoug doit être peuplé par des hommes en majorité brachycéphales. Peut-être n'en est-il pas ainsi dans les districts septentrionaux. Nous constatons encore une fois avec regret combien est lamentable notre ignorance des caractères anthropologiques de la population suisse.

La répartition des types blonds (d'après Schwerz) nous montre que le canton de Zurich est le plus riche de ce type et la répartition des types bruns nous montre également une assez grande abondance de ce caractère dans ce massif cancéreux.

En somme, devant la pénurie des documents anthropologiques actuellement envisagés, nous ne pouvons rien conclure au sujet des rapports possibles entre les taux maxima du cancer et la race, pour ce qui concerne le massif suisse le plus cancéreux.

A l'autre extrémité de l'échelle des taux de mortalité, nous trouvons d'abord le canton du Valais, puis quelques districts isolés, celui de la Riviera (Tessin) 20,4; d'Ober-Landquart (Grisons) 26,8; d'Interlaken (Berne) 28,4. Les statures de ces districts sont respectivement: 1 m. 648, 1 m. 669, 1 m. 651. Les caractères craniens des seuls Grisons nous sont connus. Ils accusent la brachycéphalie. La répartition exacte des types blonds et des types bruns dans ces districts, nous ne la savons guère, sauf pour ce qui concerne le canton de Berne. Le district d'Interlaken ne contiendrait que 12 % d'individus possédant le type blond pur.

Dans l'Oberland bernois les districts s'échelonnent de la façon suivante, selon la proportion des types blonds qu'ils renferment:

Tableau N° 9.

Districts	Types blonds pour 100	Taux de mortalité
Thoune	10,–	33,6
Nieder-Simmenthal	11,–	34,2
Interlaken	12,–	28,4
Frutigen	13,–	53,1
Ober-Hasle	16,7	54,5
Ober-Simmenthal	17,5	39,2
Saanen	28,3	45,8
Moyennes	*20,8*	*46,5*

Dans cette région les districts les plus blonds sont nettement plus cancéreux que les districts les moins blonds. Peut-être faut-il retenir ce résultat ?

Est-ce à dire que nous trouvons là une confirmation de ce que nous a montré — semble-t-il — l'étude générale de l'Europe ? Il faut savoir attendre.

L'indice céphalique.

Si nous pouvons constater que la stature des Suisses est bien connue, nous ne pouvons pas, hélas, faire la même constatation pour ce qui regarde les autres caractères morphologiques et descriptifs. Depuis longtemps déjà, nous l'avons dit, il est question, au sein des sociétés scientifiques, d'instaurer une vaste enquête anthropologique dans tout le pays. Jusqu'à ce jour l'action n'a pas suivi la parole. Toutes nos connaissances relatives à l'indice céphalique en Suisse sont le résultat d'efforts individuels.

A l'égard de l'indice céphalique, de très grands territoires sont encore totalement inconnus.

En 1867, His et Rutimeyer *(Crania Helvetica)*, après avoir étudié environ 250 crânes, les uns « des temps historiques », les autres des temps contemporains, avaient établi quatre types craniens en Suisse: le type de Sion (des temps préromains); le type de Hohberg (des temps romains au V^e^ siècle après J.-C.); le type de Bel-Air, de l'époque burgonde et alémane (du V^e^ au IX^e^ siècle); le type de Disentis (du moyen-âge et des temps actuels). L'indice céphalique du premier est 77,2, celui du second 70,0. Les deux autres sont respectivement 73,89 et 86,5. Une telle classification n'a guère aujourd'hui qu'une valeur historique. Mais elle montre que la Suisse a été habitée à des périodes qui ne remontent pas très haut dans le passé, par des populations dolichocéphales aussi bien que par des populations brachycéphales, les premières paraissent avoir été, pendant des siècles, prépondérantes.

Ce qu'il faudrait savoir, après de telles constatations, c'est si les populations dolichocéphales, qui, autrefois, occupaient telle ou telle partie de la Suisse, l'occupent encore. Que des changements, que des déplacements d'une certaine importance s'opèrent parmi les habitants d'une ville, où il existe toujours une certaine proportion de population flottante, cela est l'évidence même, et les caractéristiques ethniques d'une grande cité peuvent se modifier au cours des générations. Il n'en est pas de même dans les territoires monta-

gneux et ruraux, où la seule possession du sol assure la pérennité des caractères. Dans les pays où le régime de la petite propriété est en vigueur, rien n'est plus immuable — ou rien n'a été plus immuable — que l'agriculteur sédentaire. D'après deux ou trois études préliminaires, il semble que certains îlots ayant un type cranien spécial — les dolichocéphales du Valais (région Sion-Sierre), par exemple —, ont gardé, depuis le protohistorique, leurs caractères morphologiques.

Le beau tableau anthropologique que pourrait montrer la Suisse n'est encore revêtu que de quelques touches sur deux ou trois endroits: le canton du Valais, la Suisse centrale, les Grisons, quelques rares autres régions.

Lorsque Deniker a établi sa carte de l'indice céphalique en Europe, il a constaté et souligné la pauvreté des renseignements concernant la Suisse. Il croyait pouvoir fixer à 81,7 (83,7 sur le vivant) l'indice moyen du pays entier. Il se basait pour cela sur l'examen, par Kollmann et Hagenbach [1], de 232 crânes déposés au musée de Bâle, provenant de diverses parties du pays. Plus de la moitié de ces crânes (53 %) ont un indice au-dessus de 80 (82 sur le vivant); plus d'un tiers sont mésocéphales (indice 77 à 82). Cependant, il n'a pas cru devoir reporter sur la carte cette indication. Il a eu raison. Pour un pays comme la Suisse, une telle moyenne n'eut rien exprimé. S'il est un Etat pour lequel des enquêtes régionales s'imposent c'est bien celui-là.

Les caractères anthropologiques de la population vivante ont été en Suisse l'objet d'un très petit nombre d'observations. La plupart de nos documents craniologiques, nous les avons obtenus en étudiant les ossuaires. Cette pieuse coutume, évidente survivance de la sépulture au second degré du Néolithique, n'existe que dans les cantons catholiques. Ceux-là surtout figureront dans l'exposé que nous allons tenter.

L'ouvrage classique de His et Rutimeyer [2] contient les données relatives à une série de 100 crânes modernes provenant de l'ossuaire d'Emmetten (canton d'Unterwald). L'indice céphalique moyen de ces 100 crânes est 84,6 (soit 86,6 sur le vivant). Soixante-six de ces crânes sont nettement brachycéphales (type de Disentis); trente-quatre se rapprochent du type dit de Sion (moyenne 81,6).

Plus tard, Beddoe [3], étudiant une petite série de 20 crânes à Stans, trouve l'indice céphalique 83,6 (85,6 sur le vivant).

En 1898, O. Schürch [4], dans un travail d'ensemble sur la Suisse centrale, examina, dans le canton d'Unterwald, les crânes des ossuaires de Buochs et de Stans. Les indices céphaliques de ces deux localités sont respectivement (sur le vivant): 85,65 et 85,4. La brachycéphalie moyenne du canton d'Unterwald ne peut plus faire de doute. Dès maintenant, que le lecteur veuille bien se rappeler la haute stature de cette population.

Schürch a porté ses investigations sur d'autres cantons de la Suisse centrale. Les crânes de Hasle (Lucerne) lui ont fourni l'indice céphalique 82,8 (84,8 sur le vivant); ceux de Schattdorf et d'Altdorf dans le canton d'Uri, respectivement 83,96 (85,96 sur le vivant) et 83,71 (85,71 sur le vivant).

Voici trois cantons de la Suisse centrale qui nous apparaissent comme un massif très net de brachycéphalie. Avons-nous le droit d'étendre ce caractère à leur périphérie, même aux cantons les plus voisins ? Je ne serais pas éloigné de répondre par l'affirmative. Mais ce n'est qu'une présomption.

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[1] Kollmann et Hagenbach: *Die in der Schweiz vorkommenden Schädelformen*, Verhandlung der Naturforschenden Gesellschaft, Basel, 1884-1885.

[2] His et Rutimeyer: *Crania Helvetica*, Basel und Genf, 1867.

[3] J. Beddoe: *The races of Britain, a contribution to the anthropology of Western Europe*, Bristol and London, 1885.

[4] O. Schürch, *Neue Beiträge zur Anthropologie der Schweiz*, Berne, 1900.

Deux autres cantons sont assez bien connus quant à leur craniologie: celui du Valais et celui des Grisons. Le premier surtout a été l'objet d'enquêtes suivies aussi bien sur la population vivante que sur les documents ostéologiques renfermés dans ses ossuaires [1].

Le canton des Grisons, à cause des souvenirs historiques qu'il évoquait, par la présence de populations parlant d'anciennes langues dérivées du latin, fut très vite un objectif anthropologique. En 1859 déjà, Baer [2] y étudiait 6 crânes romanches du Churwalden (au sud de Coire). Il leur attribuait un indice très élevé (90,8). Quatrefages et Hamy [3] mesurant 6 crânes des environs de Coire et un crâne de Disentis indiquaient les valeurs respectives 84,3 et 88,2.

Beddoe donne l'indice céphalique moyen 83,6 pour 36 crânes de Davos. Scholl [4] a publié les mesures de deux séries de crânes des Grisons: 35 crânes de Davos (indice 85,3), 10 crânes de Poschiavo (indice 85). Les séries de Beddoe et Scholl échelonnent leurs indices de 78,1 à 89,9. Dans ces séries on ne rencontre donc pas des types dolichocéphales vrais.

Eugène Pittard [5] a publié une série de mémoires sur la craniologie de diverses parties des Grisons, marquant la très réelle brachycéphalie de cette population et marquant aussi, pour certaines régions, les grandeurs exceptionnelles des crânes qu'il étudiait.

Wettstein [6] reprenant l'examen des ossuaires de la Vallée du Rhin, de Disentis et environs, obtient l'indice céphalique moyen 85,4.

J'ai encore des notes inédites sur des crânes étudiés dans la région de l'Albula. Je puis affirmer que la majorité d'entre eux sont du type brachycéphale.

Ainsi donc, d'un examen qui a porté sur cinq ou six endroits différents, à d'assez grandes distances géographiques les uns des autres, il semble bien ressortir que la population du canton des Grisons — la population rhétique — appartient, dans sa très grande majorité, au type brachycéphale. De plus, pour une certaine quantité d'entre eux, on peut ajouter qu'à leur brachycéphalie ces crânes joignent une capacité et un poids exceptionnels. La grandeur particulière de tels crânes sous-entend la stature élevée de ceux qui les possédaient.

Au nord de la Suisse, deux cantons ont apporté une modeste contribution à la connaissance que nous recherchons. Schwerz mentionne l'étude de deux petites séries, l'une à Schaffhouse, l'autre à Zurich. Les résultats sont les suivants:

	Indice céphalique moyen	Dolicho et mésocéphales	Brachy-céphales	Hyperbra-chycéphales
Schaffhouse	84	7	66	26
Zurich	83	19	41	29

[1] M. Bedot: *Notes anthropologiques sur le Valais*, «Bulletin de la Société d'anthropologie», Paris, 1895-1898.

E. Pittard: Nombreux mémoires en partie assemblés dans *Crania Helvetica, Les crânes valaisans de la Vallée du Rhône*, Paris et Genève 1910, plus divers mémoires avec Louis Reverdin sur les vallées latérales du Valais, parus dans les *Archives suisses d'anthropologie générale*.

[2] A. von Baer: *Ueber den Schädelbau der Rhätischen Romanen*, «Bulletin de l'Académie des Sciences de Saint-Pétersbourg», 1859.

[3] Quatrefages et Hamy: *Crania Ethnica: Les crânes des races humaines*, Paris, 1882.

[4] Scholl: *Ueber rätische und einige andere alpine Schädelformen*, Iéna, 1892.

[5] Fug. Pittard: Plusieurs mémoires dans le «Bulletin de la Société d'anthropologie de Lyon», 1901-1902. (Voir index bibliographique.)

[6] Wettstein: *Zur Anthropologie und Ethnographie des Kreises Disentis*, Zurich, 1902.

Comparés à ceux de la Suisse centrale, ces chiffres sont plus faibles. Ils marquent nettement une moindre brachycéphalie.

A l'autre extrémité de la Suisse, les cantons de Genève et de Vaud nous ont donné quelques maigres renseignements sur leurs caractéristiques céphaliques. J'ai mesuré autrefois, à Genève, 239 individus des deux sexes. Leur indice céphalique moyen était 81,3. J'ajoute que ces mesures ont été effectuées dans la ville même de Genève où la population, autochtone ou nationalisée, est composée par des types ethniques divers [1].

Une étude faite jadis dans le canton de Vaud — malheureusement sans la spécification des districts — m'avait montré la répartition suivante, approximative, des deux formes craniennes principales: types dolichocéphales 31 % ; types brachycéphales 58,6 % [2]. Le district de La Vallée, étudié à part, [3] m'avait donné une plus fort eproportion du type brachycéphale que le canton dans son ensemble.

Pendant bien des années, le canton du Valais a fait partie de mes préoccupations anthropologiques. C'est certainement la région de la Suisse dont nous pouvons montrer les caractères sans hésitation. Tous les districts valaisans ont été étudiés. Il est vraiment regrettable que nous n'osions pas faire de fonds sur les statistiques relatives aux taux de mortalité par cancer dans ce canton, car ce serait peut-être là, pour l'Europe entière, le lieu où les comparaisons auraient été le plus fructueuses. Bedot a mesuré les recrues du canton tout entier. J'en ai mesuré aussi une partie.

Le Valais est nettement brachycéphale, sauf en une zone avoisinant la ville de Sion où, depuis l'âge de fer, nous constatons un îlot de dolichocéphales [4]. Nous en dirons quelques mots plus tard.

J'ai reporté sur une carte (carte N° 14) les indications fournies par ces quelques cantons suisses au sujet de leur indice céphalique. Plusieurs régions ont été coloriées par extension (Zurich, centre Berne, Genève, Vaud), d'autres sont revêtues de leur couleur définitive.

La couleur des yeux et des cheveux.

Ces caractères descriptifs sont loin d'être connus en Suisse dans tous les détails désirables. Les anciennes enquêtes [5] de Kollmann, celles de Studer, les documents postérieurs colligés par Schwerz nous permettent-ils d'établir, dans ses grands traits, la répartition des types humains basés sur ces caractères ?

Je rappelle que les enquêtes de Kollmann et de Studer, si elles ont porté sur un grand nombre de sujets n'ont été faites qu'à l'aide des écoliers. Elles sont, à cause de cela, sujettes à de certaines réserves.

A des réserves techniques d'abord. Les statistiques, dans chacun des districts de la Suisse, ont été effectuées principalement par les instituteurs. Or, malgré l'intelligence et la bonne volonté de ce corps d'élite, bien des erreurs ont pu s'introduire dans ces enquêtes. Les interprétations des nuances d'yeux et de cheveux ne sont pas toujours très faciles.

A des réserves d'ordre physiologique ensuite: A l'âge scolaire, les enfants n'ont pas tous acquis leur état définitif de pigmentation. Au cours de la première partie de notre existence, des changements de coloration de nos cheveux et de nos yeux s'opèrent à des moments difficiles à fixer. J'ai souvent été frappé, lorsque je voyageais dans les Balkans —

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[1] Etude encore manuscrite, citée par Deniker dans son mémoire sur l'indice céphalique de l'Europe.

[2] Pittard et Sergent: *Anthropologie de la Suisse. Contribution à l'étude anthropologique des habitants du canton de Vaud*, « Archives suisses d'anthropologie générale », tome III, 1919.

[3] Pittard et Décombaz, étude manuscrite, « Dictionnaire géographique de la Suisse ».

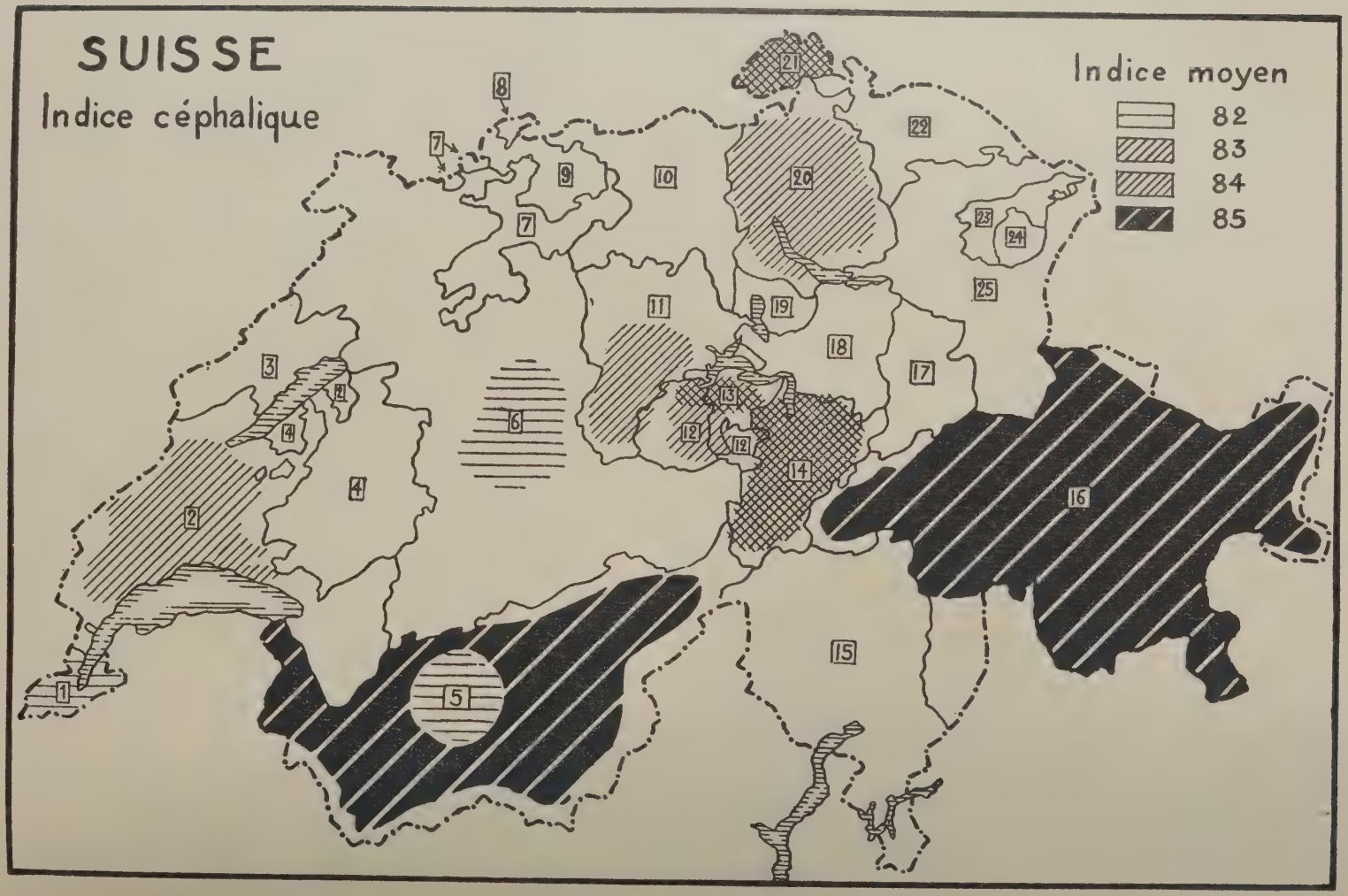
[4] Eug. Pittard: *Crânes de l'âge du fer provenant du Valais*, « Archives suisses d'anthropologie générale », tome I, N° 3, 1915.

[5] Déjà cité, voir ci-dessus.

Cartogramme N° 14.

SUISSE.

Indice céphalique (moyen).



où se trouvent principalement des populations brunes — de constater combien les enfants étaient fréquemment blonds. A quel âge exact a lieu, chez les divers types humains, la transformation définitive, l'acquisition pour toujours de la coloration des yeux et des cheveux ? Personne n'oserait imposer ce moment parce que nous manquons d'enquêtes précises sur ce point et surtout d'enquêtes généralisées dans l'espace, sur un grand nombre de groupes ethniques.

Des observations destinées à connaître la pigmentation réelle d'une population devraient être faites sur les recrues militaires. Quelques pays les ont déjà acquises pour leurs inventaires anthropologiques et descriptifs. Mais il serait particulièrement utile de répéter, sur les mêmes individus, au moment du recrutement militaire, l'enquête faite quelques années auparavant dans les écoles.

La carte N° 15 donne la répartition des types blonds d'après Kollmann (le canton de Berne d'après Studer). Un simple coup d'œil sur cette carte montre combien les idées préconçues — nées de la confusion existant entre la race et la langue — qu'on pourrait avoir au sujet de la répartition d'un tel type en Suisse seraient erronées. Les pourcentages les plus élevés se rencontrent aussi bien dans des cantons parlant français comme Genève, ou italien comme le Tessin, que dans des cantons de langue exclusivement germanique comme Zurich, Thurgovie, Schwytz, etc.

Cette carte montre dans ses détails deux ou trois choses intéressantes. C'est d'abord la très faible quantité d'individus ayant le type blond dans les cantons d'Unterwald, de Lucerne et de Glaris. C'est le fait que, dans son ensemble, le canton de Berne n'a guère plus de blonds, sauf dans l'Oberland, que ses voisins romands, les cantons de Vaud et du Valais. Dans sa partie jurassienne, il en a moins que ceux-ci.

C'est de voir le canton de Schaffhouse, enclavé en plein territoire germanique — de langue et de nationalité — où le pourcentage des blonds est élevé, posséder moins d'individus de ce type que le canton de Genève enclavé en plein pays de langue et de nationalité françaises.

De semblables observations découlent également de l'examen d'une carte que j'ai dressée en résumant les données de Schwerz (carte N° 16). Cet auteur a multiplié les subdivisions jusqu'à six. Dans ces conditions, on voit subsister les grandes lignes qui viennent d'être constatées et apparaître un ou deux faits nouveaux. Une coulée de types blonds aux yeux bleus semble traverser la Suisse du nord au sud, de Zurich au Tessin par les cantons de Zoug, Schwytz et Uri. C'est la masse blonde, déjà révélée par Kollmann, à la répartition de laquelle rien ne paraît avoir été changé par les observations ultérieures. Mais, au départ de cette coulée, le canton de Schaffhouse fait exception. Dans le canton de Berne (voir la carte spéciale de Studer) les blonds aux yeux bleus vont en diminuant quantitativement, en allant de l'Oberland à l'extrême Jura.

Que la répartition linguistique en Suisse ne recouvre que d'une étiquette sans signification anthropologique la plupart des cantons, cela est loin de nous surprendre. Il y a certainement dans les cantons romands une grande quantité d'individus de race nordique ou germanique, de même qu'il y a certainement dans les cantons alémaniques une grande quantité d'individus n'appartenant nullement à cette race. Le pourcentage le plus élevé des blonds se trouve dans le district bernois de Saanen.

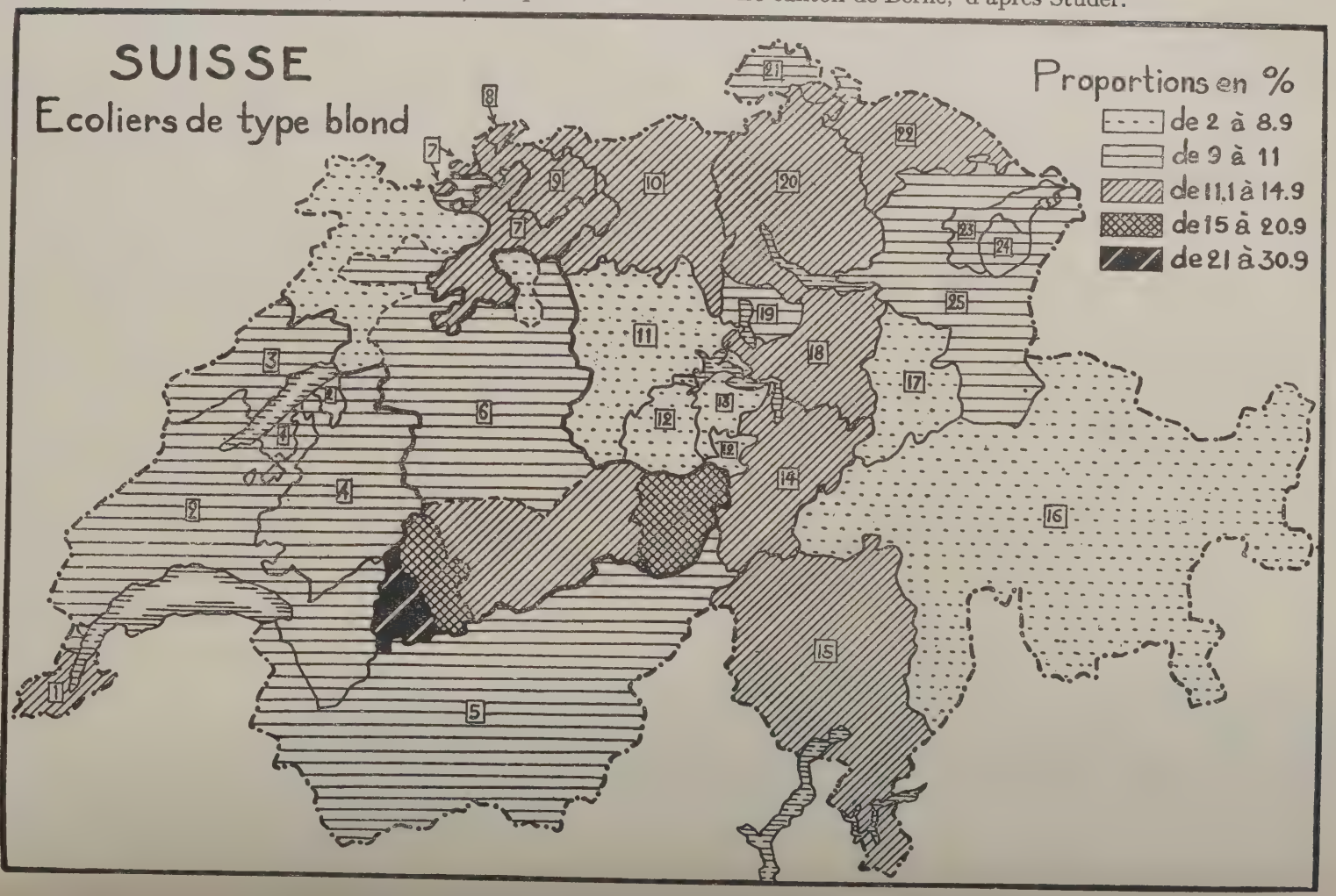
La carte du type brun (cartes N^{os} 17 et 18) est également empruntée aux mêmes auteurs (Kollmann, Studer et Schwerz). Ce type est composé par les individus qui ont à la fois les cheveux et les yeux bruns. De toute la Suisse, c'est le canton d'Unterwald qui possède le moins grand nombre de ceux-ci et quelques districts du canton de Berne révélés par l'enquête de Studer. Ce sont les cantons des Grisons, Tessin, Glaris qui en possèdent le plus. Les cantons ayant des quantités intermédiaires de ce type composent deux groupes: l'un à l'est comprenant surtout St-Gall, Thurgovie, Zurich, Uri, Schaffhouse; l'autre à

Cartogramme Nº 15.

SUISSE.

Répartition géographique de la proportion d'écoliers de type blond.

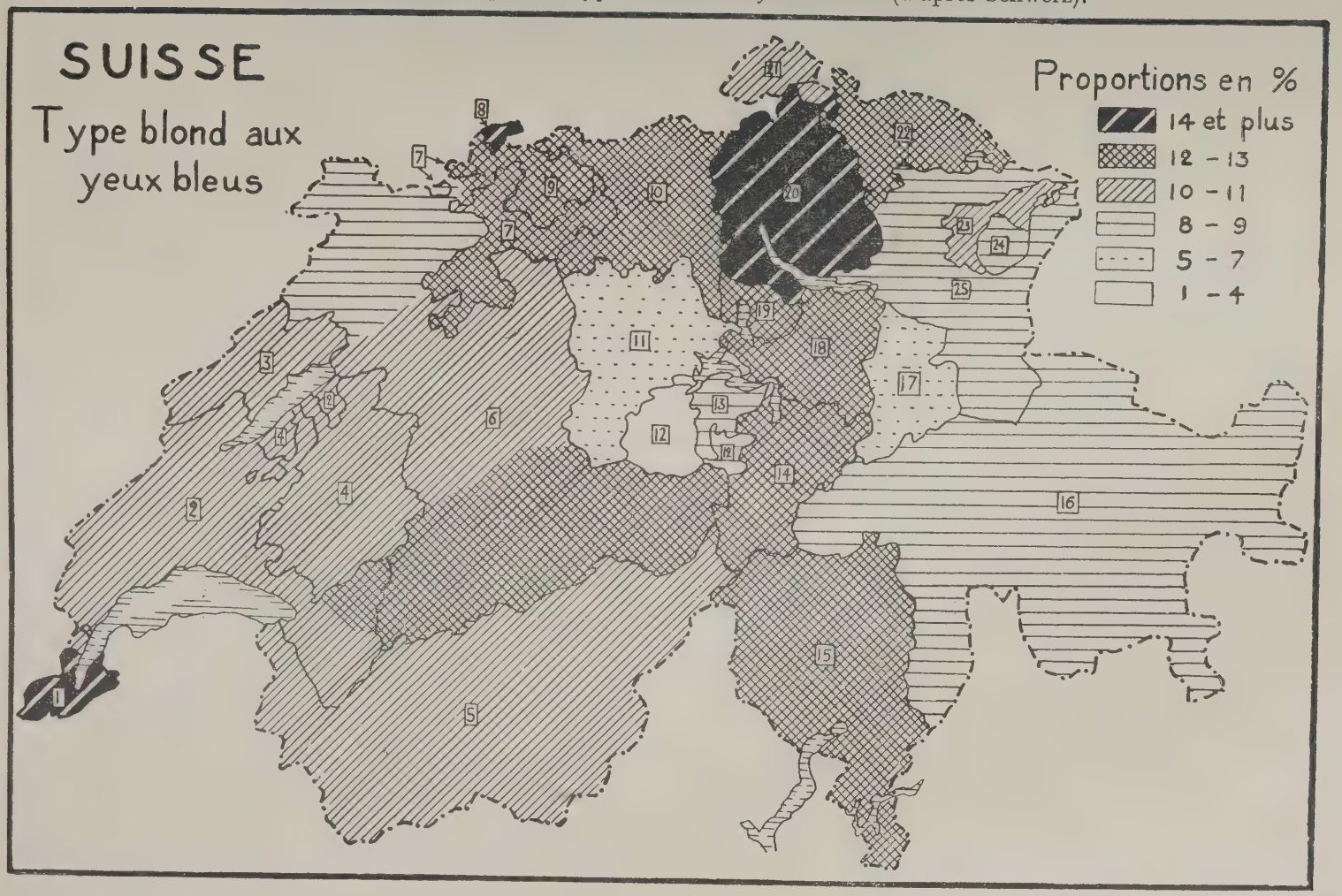
La Suisse (moins Berne), d'après Kollmann. — Le canton de Berne, d'après Studer.



Cartogramme N° 16.

SUISSE.

Répartition géographique du type blond aux yeux bleus (d'après Schwerz).

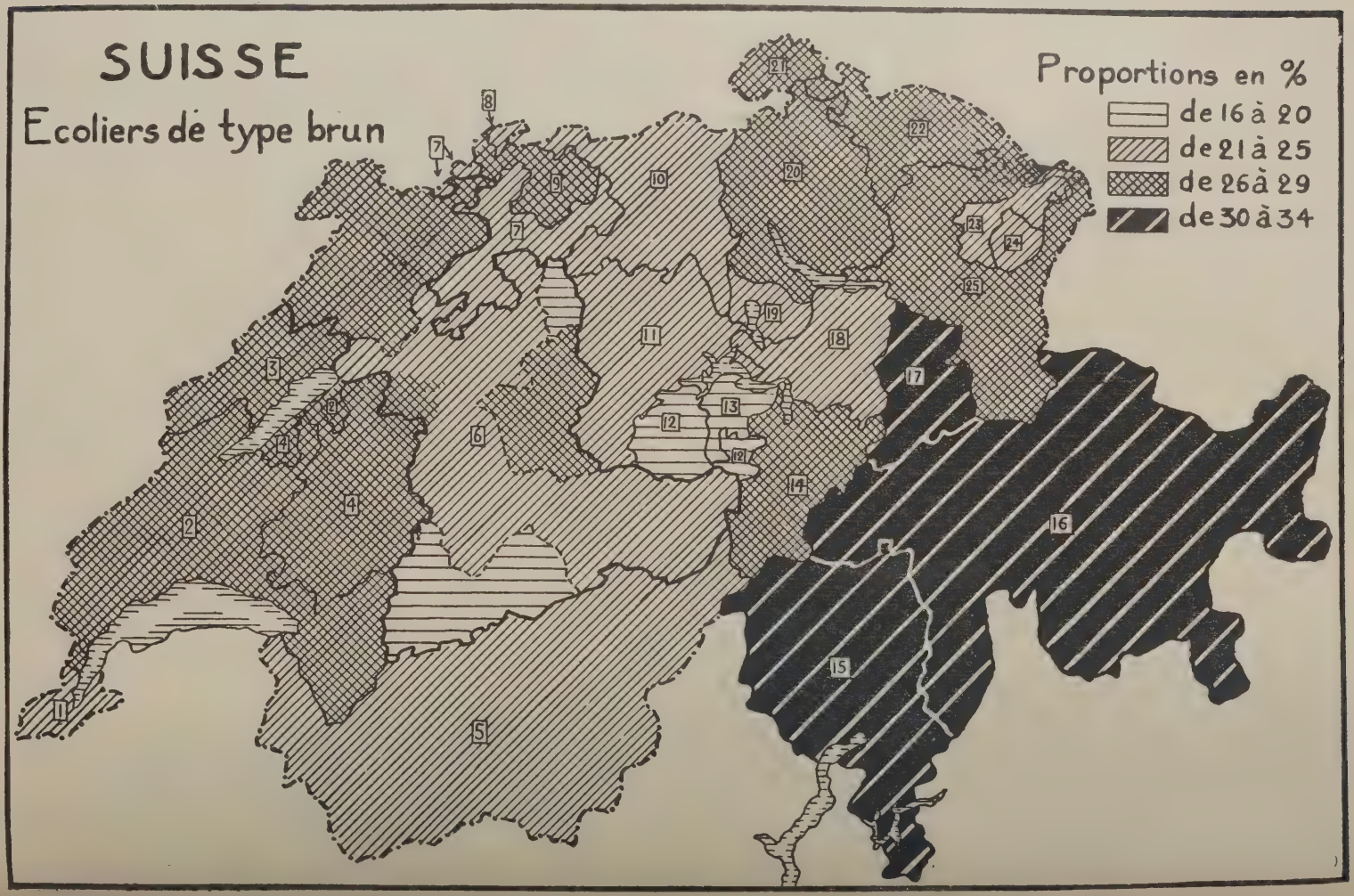


Cartogramme N° 17.

SUISSE.

Répartition géographique de la proportion d'écoliers du type brun.

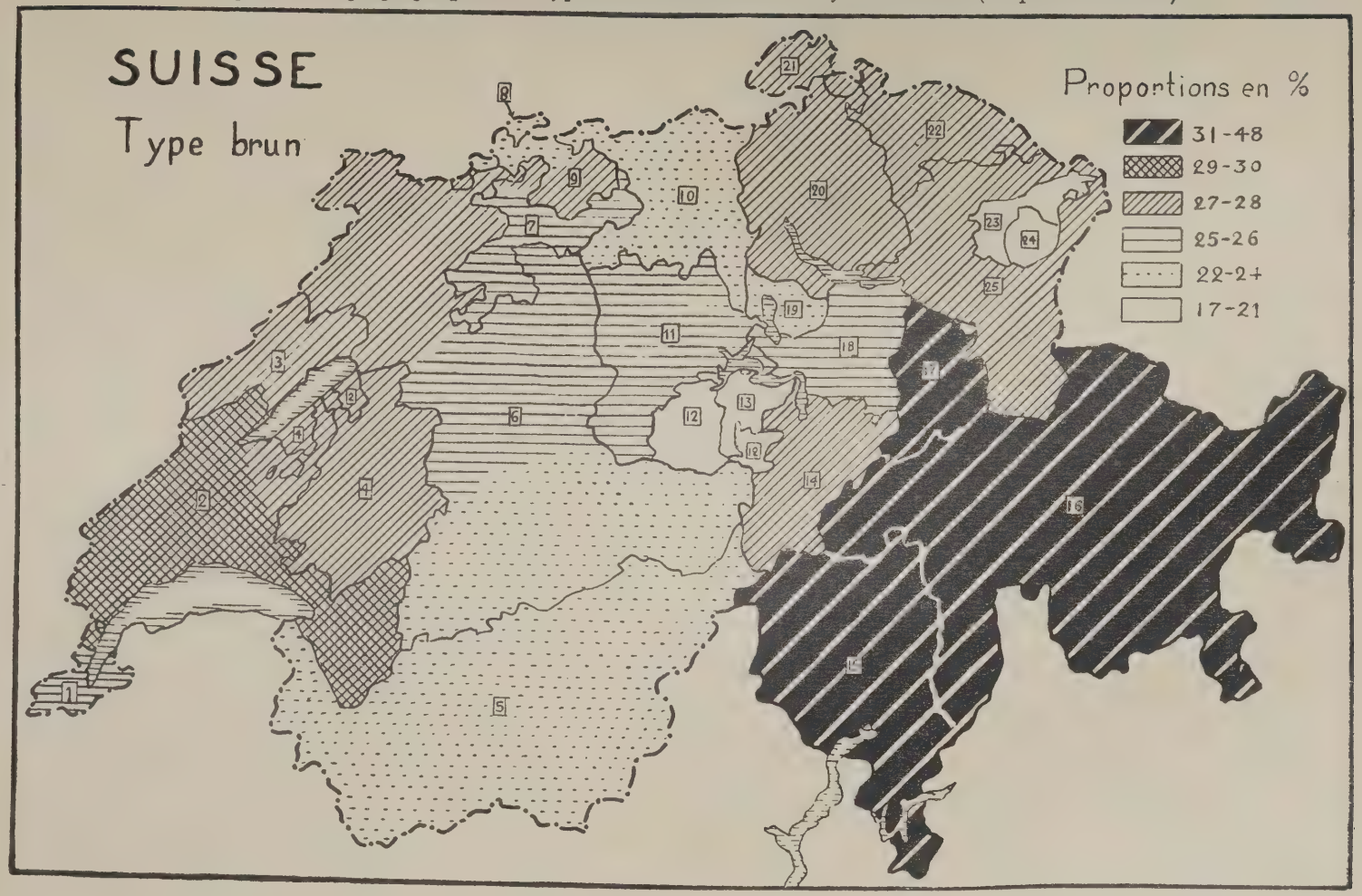
La Suisse (moins Berne), d'après Kollmann. — Le canton de Berne, d'après Studer.



Cartogramme N° 18.

SUISSE.

Répartition géographique du type brun à cheveux et yeux bruns (d'après Schwerz).



l'ouest comprend les cantons de Vaud, Fribourg, Neuchâtel, la partie jurassienne de Berne, Bâle-campagne. Une partie du centre de la Suisse, les deux Appenzell et Genève ont des proportions qui varient de 21 à 25 %.

Pour compléter les renseignements fournis par ces diverses cartes où la couleur des cheveux apparaît comme l'élément descriptif dominateur, voici encore quelques indications apportées par le pourcentage des yeux gris associés aux cheveux blonds et à la peau claire (carte N° 19). Nous empruntons les éléments de ce tableau à l'ouvrage de Schwerz.

Ce pourcentage s'échelonne de 17 (Tessin) à 48 (Unterwald-Nidwald).

L'examen des cantons montre une assez grande inégalité dans la répartition de ce type aux yeux gris. Leur concentration est au milieu de la Suisse, où les deux Unterwald constituent un îlot dont la population a très fréquemment ce caractère (41 % en moyenne). On se rappellera que les deux Unterwald étaient les cantons qui montraient le minimum de types bruns. Les régions dont les pourcentages se rapprochent de ceux-là sont le canton de Schaffhouse (29 %), celui de Lucerne et la partie médiane du canton de Berne (30 %). Un *decrescendo* quantitatif nous conduit en Argovie (28 %), dans le reste du canton de Berne, à Genève, dans l'Appenzell (Rhodes intérieures). Ainsi, jusqu'à présent, ce sont principalement des cantons parlant allemand. Il s'y ajoute deux régions dont la langue est le français: le Jura bernois et Genève.

Les cantons possédant le minimum de types aux yeux gris sont les cantons du Tessin, des Grisons et de Vaud (21 % chez ces deux derniers). Viennent ensuite, avec des proportions comprises entre 22 % et 24 % les cantons du Valais, de Glaris, de Zurich et de Thurgovie.

On voit qu'il n'est guère possible de grouper, selon la langue qu'ils parlent, les cantons romands ou allemands, en cantons riches ou pauvres de types aux yeux gris. Cependant, d'une façon générale, la Suisse française — Genève et le Jura bernois exceptés — constitue une zone où les types aux yeux gris ne sont pas très abondants. Dans l'Orient de la Suisse, en plein pays de langue allemande, nous retrouvons des groupements humains, où ces types ne sont pas non plus très nombreux.

La répartition des taux cancéreux selon les caractères anthropologiques autres que la taille.

Chemin faisant, nous avons déjà fait quelques remarques au sujet des taux cancéreux associés à certains caractères anthropologiques, en particulier la stature. Malgré que les documents morphologiques et descriptifs qui nous seraient nécessaires nous font presque défaut, nous essayerons d'établir quelques rapprochements entre les taux de mortalité et les types humains qui en sont les victimes. La carte anthropologique de la Suisse ne contient pas assez d'indications pour que nous parlions d'elle. Il nous faut examiner la carte de la répartition du cancer et tâcher d'expliquer, par des raisons anthropologiques, la variété des taux qu'elle présente.

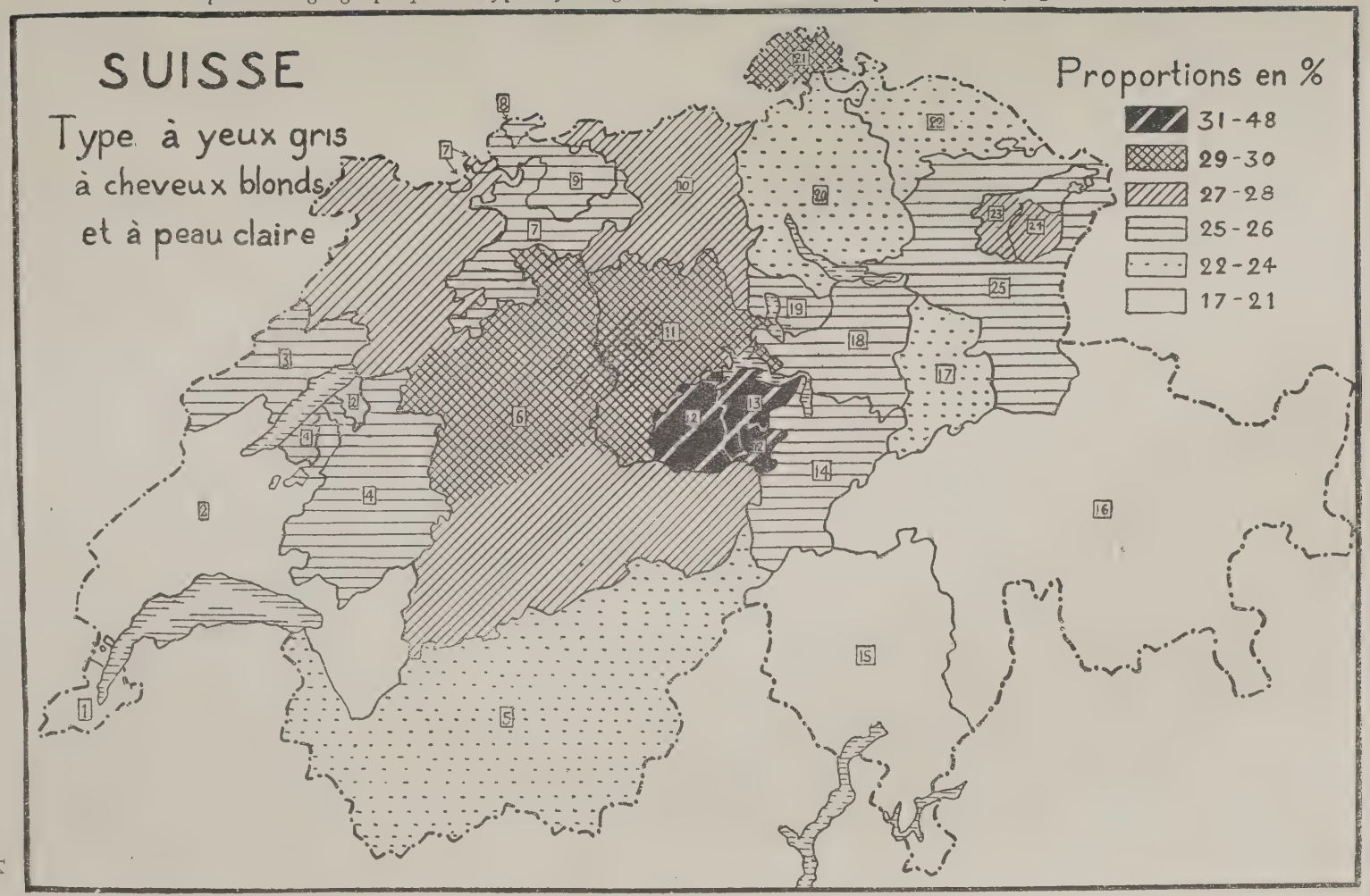
Le massif cancéreux du centre nord-est semble renfermer des populations qui sont en majorité brachycéphales. Cela paraît surtout évident pour les cantons de Lucerne et d'Unterwald; les cantons septentrionaux de ce massif, comme Zurich, Thurgovie, renferment certainement un moins grand nombre d'individus de ce type. Les indices céphaliques moyens de Zurich et celui de Schaffhouse sont là pour nous le faire croire.

Si nous faisons appel aux caractères de la pigmentation, nous constatons que ce massif ne contient pas un nombre élevé d'individus blonds, mais il ne contient pas non plus une grande quantité d'individus bruns. Unterwald en montre même très peu. La population de ce massif semble donc appartenir, quant à la couleur de ses cheveux, à des types intermédiaires.

Cartogramme N° 19.

SUISSE.

Répartition géographique du type à yeux gris, à cheveux blonds, à peau claire (d'après Schwerz).



Les zones faiblement cancéreuses de la Suisse — ce ne sont pas les districts minima — sont peuplées, les unes par des individus très nettement brachycéphales (le canton des Grisons et celui d'Uri), les autres par des populations où le pourcentage des crânes arrondis doit être beaucoup moins élevé: Genève, Vaud, partie moyenne et septentrionale du canton de Berne. Le premier de ces deux groupes est plutôt pauvre en individus blonds; il est relativement riche en types bruns. Le second groupe est relativement pauvre en blonds, et assez riche en bruns sauf Genève et certains districts du centre Berne. On s'aperçoit combien il est difficile, en ne considérant que les faits généraux, de tirer des conclusions raisonnées.

* * *

Les anthropologistes ont coutume de considérer une grande partie de la population suisse comme apparentée à la race brachycéphale brune, de taille moyenne, c'est-à-dire à la race celtique, au type de l'*Homo alpinus*.

Il est très vraisemblable qu'il en soit ainsi. Pour ma part, je crois qu'une forte proportion des habitants du massif alpin — en dehors de ceux qui se rattachent à la race dinarique — font partie de ce type.

Il est, d'autre part, hors de doute qu'une certaine proportion de la population suisse appartient au groupe de la race nordique. Nous n'avons pas les éléments nécessaires pour la discrimination géographique de ce groupe. Certaines régions, marquées anthropologiquement par une haute stature et des cheveux blonds pourraient être peuplées par les représentants de cette race.

On conçoit combien il est difficile, dans l'Etat actuel de notre documentation, de fixer des limites. Le canton de Berne qui est un des plus grands cantons de la Suisse, un de ceux dont la variété humaine paraît la plus certaine à cause des différences que présentent, selon les districts, la stature et la pigmentation, est, à l'égard de ce dernier caractère, le canton qui a été probablement le mieux étudié. Studer a dressé les cartes [1] des types blonds et des types bruns. Il a également dressé les cartes des proportions d'yeux gris par rapport aux yeux clairs et des proportions d'yeux bruns par rapport aux yeux bleus. J'ai essayé d'établir des groupes de taux de mortalité en fonction de la valeur numérique croissante des yeux bruns par rapport aux yeux bleus. Je mets en tête les districts qui possèdent les plus petites proportions d'yeux bruns et j'établis quatre catégories.

Proportion des yeux bruns par rapport à 100 enfants ayant les yeux bleus	Taux de mortalité par cancer
1. de 101 à 250	48,15
2. de 251 à 350	34,87
3. de 351 à 460	36,85
4. de 461 à 1.900	42,64

Il semble que les populations ayant parmi elles d'abondants représentants à cheveux bruns ne sont ni plus ni moins touchées par le fléau cancéreux que les populations dont la richesse relative en yeux bleus pourrait sous-entendre une origine ethnique différente. Cependant, si au lieu de quatre groupes je n'en fais que deux, par concentration des types les plus rapprochés, j'obtiens, toujours dans l'ordre croissant des bruns, les taux suivants:

Premier groupe	41,51
Second groupe	39,75

Les populations les plus brunes paraissent payer un moins lourd tribut au cancer.

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[1] Studer: *Ueber die statistische Aufnahme der Farbe der Haut und der Augen im Kt. Bern*. Mitteil. der Naturf. Ges. in Bern, 1880-1881.

Mais, dans l'état actuel de nos enquêtes anthropologiques, ce sont là seulement des présomptions.

Influence possible de la race dinarique.

Les anthropologistes admettent que la race dinarique, parmi les irradiations qu'elle a effectuées loin de son centre principal, a peuplé en partie la Suisse. Ses représentants se rencontreraient selon Deniker [1] « dans la Vénétie, parmi les Latins du Tyrol, parmi les Roumanches de la Suisse, ainsi que dans les populations du pays qui s'étend, du sud au nord, depuis Lyon jusqu'à Liége entre la Loire et la Saône d'abord, puis sur le plateau de Langres, dans les hautes vallées de la Saône et de la Moselle, ainsi que dans les Ardennes. » Des populations ayant ces caractères un peu atténués se rencontreraient dans la basse vallée du Pô, dans le nord-ouest de la Bohême, de la Suisse romande, en Alsace, etc.

Ainsi, d'après Deniker, nous aurions la possibilité de retrouver des représentants de la race dinarique non seulement dans les Grisons, mais encore ailleurs en Suisse, notamment dans la Suisse romande et dans d'autres lieux auxquels cet auteur n'a pas songé parce qu'il n'avait probablement pas les documents voulus pour établir cette hypothèse. Dans un mémoire dont il a déjà été question [2], j'ai montré qu'à l'aide des statistiques des taux de mortalité par le cancer, il apparaissait que la race dinarique était une des races européennes les moins touchées par cette maladie [3].

Les caractéristiques morphologiques et descriptives principales de la race dinarique, là où elle est relativement homogène, sont une stature élevée (1 m. 68 à 1 m. 72 en moyenne), une forte brachycéphalie (indice céphalique 85-86), une pigmentation abondante; cheveux et yeux bruns ou noirs.

Dans quelles régions de la Suisse pouvons-nous espérer rencontrer des représentants de cette race ?

Nous devons constater encore une fois la pénurie des documents anthropologiques concernant la Suisse. Mais nous pouvons tout de même faire quelques suppositions.

La carte de la stature en Suisse montre quelques îlots de haute taille (dépassant 1 m. 670). Si nous éliminons les grandes villes où les statures élevées peuvent s'expliquer par un autre phénomène (le facteur ethnique y joue tout de même son rôle), nous restons en face de quelques régions où la population est particulièrement grande. Ce sont, dans les Grisons, les districts de la Maloja, d'Heinzenberg et de la Plessur; ce sont les deux demi-cantons d'Unterwald; une bonne partie du canton de Schaffhouse, le district de Zurzach (Argovie) et les districts de Lavaux, de La Vallée et de Nyon (dans le canton de Vaud.)

Nous connaissons assez bien l'indice céphalique des premières de ces régions. La brachycéphalie des Grisons et d'Unterwald est un fait certain. Le canton de Schaffhouse paraît également en majorité brachycéphale. Mais si nous savons que ce type morphologique est abondant chez les populations du canton de Vaud, nous n'osons rien dire des districts de Lavaux et de Nyon. Dans la vallée de Joux, une enquête que j'ai faite autrefois avec Mlle Decombaz [4] me fait croire que la brachycéphalie doit s'y rencontrer dans une proportion qui atteint vraisemblablement 70 %. Dans le reste du canton de Vaud, les enquêtes de Schenk et les miennes ont marqué nettement une majorité brachycéphale [5]. Toutes ces régions (sauf les deux cantons d'Unterwald et le district de Zurzach, Argovie) sont

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[1] J. Deniker: *Les races et les peuples de la terre*, Paris, 1900, page 391.

[2] Eug. Pittard: *Le cancer dans les races humaines, etc.*, Genève, 1925.

[3] Cette hypothèse est subordonnée, bien entendu, à la qualité même des statistiques médicales qui nous sont offertes.

[4] Pittard et Decombaz: Etude manuscrite citée par le « Dictionnaire géographique de la Suisse ».

[5] Pittard et Kappeyne: *La taille humaine en Suisse*. II. *Le canton de Vaud*, « Journal de statistique suisse », 1908.

dans des zones où le type brun est fortement répandu et où les types blonds sont relativement rares. Malheureusement, les données relatives à la pigmentation sont moins bien délimitées géographiquement que les autres.

Les taux cancéreux de ces districts sont:

Cantons	Districts	Taux de mortalité	Cantons	Districts	Taux de mortalité
Grisons	Maloja	37,–	Schaffhouse	Reiath	39,2
	Heinzenberg	31,6		Schaffhouse	39,2
	Plessur	35,8		Klettgau	35,5
Unterwald	Nidwald	42,2	Vaud	Lavaux	28,1
	Obwald	60,8		La Vallée	27,6
				Nyon	37,6

La mortalité moyenne de ces onze districts est de 37,7. Elle est, malgré le taux formidable d'un demi-canton d'Unterwald, notablement inférieure à celle de la Suisse (40,8).

Je rappelle que le taux de mortalité des districts dont la stature est petite (ne dépassant pas 1 m. 639) est plus élevée (42,60). Et si nous nous reportons aux plus hautes tailles (dépassant 1 m. 66) sans autre spécification ethnique nous trouvons les taux de mortalité suivants:

Pour la Suisse allemande 46,48.
Pour la Suisse française 34,84. Moyenne pour la Suisse entière = 40,62.

La mortalité des districts de haute taille, sans autre spécification, est aussi supérieure à celle des districts de la plus haute stature dont la population pourrait être apparentée à la race dinarique.

Il est bien évident que ce sont là des vues grossières. Au lieu d'opérer avec des masses, il faudrait pouvoir opérer avec des individus. Peut-être, dans ce cas, verrions-nous se révéler l'influence de la race dinarique, si tant est qu'elle existe réellement, dans les endroits que nous avons considérés.

Le cas spécial du canton du Valais.

De différents côtés on m'a fait remarquer que les enquêtes médicales dans le canton du Valais peuvent être sujettes à caution: non pas qu'il faille suspecter, en quoi que ce soit, la véracité des déclarations médicales. Mais les conditions géographiques spéciales de ce canton, tout en chaînes de montagnes, la situation pécuniaire assez restreinte de la majorité de la population, la vie dure et l'habitude de la souffrance qui crée une sorte de fatalisme vis-à-vis de la mort; ces raisons diverses, et d'autres encore, font supposer que tous les cas de cancer n'arrivent pas à la connaissance des statisticiens. On pourrait objecter que ces raisons sont valables non seulement pour le Valais mais pour le massif alpin tout entier; pour les cantons des Grisons et du Tessin, pour une partie du fort groupement cancéreux du centre nord-est de la Suisse. Je reconnais la valeur de cet argument. C'est pourquoi il me paraît nécessaire de consacrer quelques lignes au cas spécial du canton du Valais.

Un étranger qui verrait la carte de la répartition du cancer en Suisse, et qui ne connaîtrait rien des conditions internes de la statistique de ce pays, considérerait aussitôt le

canton du Valais comme un document inespéré. Et comme nulle part ailleurs, en Suisse, on ne trouve de pareils minima de taux cancéreux, il aurait là, croirait-il, une admirable base de discussion.

Deux districts valaisans seulement — sur treize que compte le canton — ont un taux de mortalité compris entre 30 et 39,9: ce sont ceux de Sion (36,8) et de Leuk (Louèche) (35,9). Tous les autres districts ont des taux plus faibles. Le minimum est 8,6 (district d'Hérens).

Plusieurs des caractères anthropologiques des Valaisans sont bien connus. C'est le canton qui a été l'objet des enquêtes craniologiques les plus détaillées. Jetons un coup d'œil sur ses diverses caractéristiques.

Par leur stature, la plupart des Valaisans appartiennent aux groupes de taille compris entre 1 m. 650 et 1 m. 669. Deux districts sont de petite taille: Entremont (1 m. 646) et Leuk (1 m. 647).

L'indice céphalique moyen des Valaisans est élevé. Plusieurs centaines de crânes ont fourni l'indice moyen 85. C'est une brachycéphalie moyenne égale à celle du canton des Grisons. Cette brachycéphalie moyenne atteint aussi bien la Vallée du Rhône que les vallées latérales. Cependant, en ce canton dont les crânes sont, en moyenne, si remarquablement arrondis, on voit surgir des exceptions. J'ai fait remarquer qu'en particulier le district de Sion montrait un certain pourcentage de types dolichocéphales ou à tendances dolichocéphaliques. Les observations anthropométriques de Bedot, lors d'un recrutement militaire, ont marqué que ce district possédait une population beaucoup moins brachycéphale que le reste du canton [1]. Ce n'est là, bien entendu, qu'une esquisse.

Le district de Sion a une stature relativement élevée (1 m. 662). Ici l'influence citadine n'a guère à être envisagée.

Pour ce qui touche à ses caractères de pigmentation le Valais tout entier est colorié uniformément. C'est un canton relativement pauvre en types blonds et modérément pourvu de types bruns. Ce sont donc les types intermédiaires qui dominent.

Il est difficile de tirer quelque chose de ces diverses observations. Si nous devions écrire en deux mots la physionomie ethnique du Valais nous dirions que la population de ce pays est de taille moyenne, brachycéphale, et souvent brune, c'est-à-dire qu'elle appartient, dans sa majorité, au type de l'*Homo alpinus*. Ce type, alors, en se basant sur la statistique du Valais, apparaîtrait peu touché par le cancer. Mais, d'autre part, nous avons d'autres cantons suisses peuplés par des représentants de ce groupe ethnique et ils sont touchés beaucoup plus fortement que le Valais.

Serait-ce alors que l'état de nos enquêtes est trop imparfait pour nous permettre de pénétrer avec exactitude dans les éléments réels du problème ? Je le croirais volontiers [2].

Conclusions.

Au cours des pages précédentes nous avons dit l'intérêt, pour les recherches que nous entreprenons, d'une étude détaillée de la Suisse, pays dans lequel les statistiques mortuaires peuvent être considérées comme parmi les meilleures. Malheureusement, les enquêtes anthropologiques faites en Suisse n'ont pas la même valeur que les statistiques des taux de mortalité. Elles n'ont été que partielles. Elles ne nous permettent pas, comme il le

[1] Voir ci-dessus les indications bibliographiques.

[2] Après le dépôt de ce rapport, lors d'une réunion de la Commission du cancer tenue à Paris, M. Carrière, directeur du Service d'hygiène de la Confédération, a donné connaissance d'une étude sur la statistique médicale en Suisse, de laquelle il résulte que les taux cancéreux relatifs au Valais sont, ainsi que nous le supposions, à revoir. A l'aide de ces documents nouveaux, je reprendrai un jour l'étude du Valais au point de vue qui nous intéresse ici.

faudrait, les comparaisons nécessaires entre les deux phénomènes que nous envisageons. Quelques cantons sont assez bien connus quant à leurs caractères morphologiques et descriptifs, mais quelques cantons seulement. Et pour un représentant de ce pays, il est désolant de faire une telle constatation. A quoi sert d'avoir d'un côté de si bons documents, et de si médiocres documents de l'autre, lorsqu'il s'agit justement de les éclairer l'un par l'autre?

Les conclusions qui doivent terminer ce mémoire seront fragmentaires puisqu'elles ne touchent que quelques régions. De plus, elles seront sans grande portée, puisque nous ne pouvons avoir la prétention d'étendre à tout le pays des observations locales.

Il en résulte que le cas de la Suisse tel qu'il est aujourd'hui présenté ne devra pas être considéré comme utilisable pour des comparaisons avec d'autres pays quant à la recherche des causes possibles de cancer.

Ces réserves et ces regrets étant formulés, nous pouvons rappeler ici quelques-uns des résultats que les pages précédentes ont permis d'énoncer.

Le cancer est très inégalement répandu en Suisse Que l'on consulte la carte où figurent les taux de mortalité sans spécification d'âges, ou celle dressée avec les taux de mortalité dès 40 ans, on constate des différences qui vont du simple au triple.

Les grandes divisions topographiques de la Suisse ne jouent aucun rôle dans la répartition de la maladie. Le massif alpin renferme des districts à faible mortalité par cancer et des districts à forte mortalité. Il en est de même du Plateau et il en est de même du Jura. On peut constater que, dans son ensemble, la zone jurassienne n'appartient pas à une catégorie de taux élevés.

Il existe en Suisse (dans le centre nord-est) un massif cancéreux très net révélé par toutes les statistiques — qu'elles aient utilisé les décès sans spécification d'âges ou les décès dès 40 ans. Le centre de ce massif reste immuable quels que soient les documents évoqués. Seule la périphérie subit quelques modifications géographiques selon les âges considérés.

Les régions d'importantes agglomérations humaines — où sont installés les centres hospitaliers — présentent souvent, presque toujours, des taux de mortalité inférieurs aux taux des districts exclusivement ruraux ou montagnards. Le taux moyen de 26 villes suisses est inférieur à celui du pays entier.

En considérant un canton seulement, c'est-à-dire une circonscription géographique limitée, on peut déjà constater une différence considérable dans la valeur des taux, selon les districts qui composent ce canton. Les cantons qui présentent les variations les plus grandes seraient à étudier de très près dans toutes les caractéristiques composant leur physionomie: géologiques, géographiques, ethniques, etc. Peut-être de telles recherches nous rapprocheraient-elles beaucoup des causes efficientes du cancer.

Lorsqu'on divise la Suisse en ses deux masses linguistiques principales on constate que la masse de langue germanique est beaucoup plus fortement touchée par le cancer que la masse de langue latine.

Cette constatation est confirmée lorsque nous étudions les taux de mortalité en fonction de la stature. Ainsi nous avons constitué trois groupes de tailles: *a*) relativement petites, *b*) moyennes, *c*) relativement hautes. Dans ces trois cas les groupes de langue germanique présentent des taux plus élevés. Pour l'ensemble de la Suisse l'examen de la taille, en fonction de la valeur des taux cancéreux, ne donne aucun résultat probant.

Il semble que les populations blondes soient plus atteintes par le cancer que les autres populations. Une telle conclusion ressort de deux ou trois faits locaux. Mais nous ne pouvons pas l'étendre à de larges espaces. Le massif cancéreux du centre nord-est paraît peuplé par des individus à pigmentation intermédiaire, ce qui ne veut pas dire du tout que ce ne sont pas les types blonds qui paient le plus lourd tribut au cancer. Mais dans l'état actuel de nos enquêtes nous ne pouvons pas l'assurer.

A l'aide des documents insuffisants qui nous sont fournis par les recherches anthropologiques, nous avons essayé de déceler en Suisse les populations de race dinarique que les anthropologistes s'accordent à considérer comme répandues en diverses parties du pays.

Dans les districts — ou les cantons — où nous avons pensé rencontrer les représentants de cette race, nous avons constaté que les taux de mortalité sont moins élevés qu'ailleurs, exception faite toutefois pour les deux demi-cantons d'Unterwald. En comprenant ces deux demi-cantons dans les territoires que peuplent en partie au moins la race dinarique, nous trouvons un taux moyen de mortalité de 37,7 alors que celui de la Suisse entière est 40,8. Si nous éliminons les Unterwald le taux moyen s'abaisse à 34,62.

La conclusion réelle qui doit ressortir de ce travail — elle contient une critique et un encouragement — c'est l'impossibilité dans laquelle nous nous trouvons de tenter des comparaisons raisonnées. Pour imposer une ferme conclusion, nous manquons trop de documentation anthropologique. Il est possible que, dans quelques années, les anthropologistes suisses, encouragés par les nécessités scientifiques à poursuivre leurs recherches, apporteront les éléments qui permettront les rapprochements que nous aurions aimé faire, qu'il est urgent de faire.

III. ÉTUDE PRÉLIMINAIRE COMPARATIVE DES RACES ET DES TAUX DE LA MORTALITÉ PAR CANCER DANS LES PAYS SCANDINAVES

Par le professeur Eugène PITTARD.

Les trois pays scandinaves: Suède, Norvège, Jutland et îles danoises, paraissent avoir appartenu jadis, aux temps préhistoriques — dès la période azilienne peut-être, presque sûrement dès l'âge du bronze — à une même civilisation, vécue par des habitants appartenant à la même origine ethnique. Le visage anthropologique de cet ensemble ne paraît pas avoir beaucoup changé au cours des âges, peut-être un peu plus en Norvège et dans le Danemark qu'en Suède. L'état de continuité que montre l'âge du bronze, par rapport à l'âge de la pierre polie, se prolongera à l'âge du fer, puis dans les temps historiques. La civilisation romaine pénétra par la voie commerciale jusqu'en Suède centrale et en Norvège méridionale, sans apporter de troubles bien graves dans la race humaine de ces pays.

Les Scandinaves de ces trois Etats sont donc aujourd'hui en grande partie au moins les descendants des Préhistoriques et des Protohistoriques qui s'établirent sur ce coin de terre libéré des phénomènes glaciaires.

Pour des raisons d'ordre pratique, nous étudierons d'un côté la péninsule scandinave, Norvège et Suède, de l'autre le royaume du Danemark.

En examinant les listes des taux de mortalité par le cancer dans les différents pays de l'Europe — en particulier en colligeant tous les documents recueillis par Hoffman — j'avais été frappé par les quantités relativement grandes d'individus atteints de cancer dans les régions septentrionales de l'Europe (Russie mise à part). De nombreuses comparaisons m'avaient donné l'impression que la race nordique payait un dur tribut à ce fléau. Mes études actuelles confirmeront-elles ces suppositions ?

A. SUÈDE.

Parmi les documents publiés jusqu'à présent sur la répartition du cancer dans le monde, la Suède figure avec quelques résultats intéressants. Quelques essais de répartition géographique et sexuelle ont été tentés sur son territoire.

Selon les statistiques de 1901-1902, publiées par Hoffman [1], sans spécification d'âges, le taux moyen de mortalité par 100.000 habitants était en Suède de 102,7. Les groupes d'années présentaient, entre eux, très peu de variations: Ainsi:

Années	Taux moyen de mortalité	
1901-1905	102,2	Moyenne 102,7.
1906-1910	104,5	
1911-1912	102,–	

[1] F. HOFFMAN: *The Mortality from Cancer throughout the World*, Newark, 1905.

Les femmes paraissent plus fréquemment touchées par le cancer que les hommes.

	Nombre de cas	Taux moyen de mortalité
Hommes	2.619	96,4
Femmes	2.851	100,2

Cette statistique selon les sexes subissait quelques modifications, si l'on s'adressait aux citadins ou aux ruraux. Dans les villes, les femmes présentaient un taux plus élevé que les hommes. A la campagne, c'était le contraire. La grande ville de Stockholm fournissait le maximum des taux cancéreux, 119,5, alors que Göteborg n'avait que 90,9.

Une statistique faite en 1905, selon quatre subdivisions géographiques: Suède méridionale, centrale, nord-centrale et du nord, n'avait pas montré de grandes modifications parmi les taux masculins. Par contre, la Suède centrale fournissait à la statistique une valeur double de celle de la Suède du Nord pour les cas féminins.

Dans le présent chapitre nous utiliserons seulement les taux de mortalité des personnes âgées d'au moins 40 ans.

1. La répartition des taux cancéreux selon les départements.

Voici d'abord le tableau des décès par cancer durant les années 1911-1915 de la population âgée de 40 ans et plus et la proportion de ces décès par rapport à la population dans sa totalité.

Tableau N° 1.

Mortalité par suite de cancer dans les départements de la Suède pendant les années de 1911 a 1915. Taux moyen pour 100.000 habitants agés de 40 ans et plus.

Départements	Décès par cancer. Moyenne annuelle 1911-1915, toute la population	Population âgée de 40 ans et plus au 31 décembre 1910	Taux moyens annuels p^r 10.000 habitants âgés de 40 ans et plus
Stockholms stad	441	103.405	42,65
Stockholms län	261	68.124	38,31
Upsala	161	42.452	37,93
Södermanland	210	56.386	37,24
Östergötland	314	95.697	32,81
Jönköping	213	67.956	31,34
Kronoberg	148	52.170	28,37
Kalmar	237	77.155	30,72
Gotland	57	20.665	27,58
Blekinge	144	44.874	32,09
Kristianstad	200	75.784	26,39
Malmöhus	407	137.367	29,63
Halland	134	47.316	28,32
Göteborg och Bohus	381	112.816	33.77
Älvsborg	291	96.809	30,06
Skaraborg	275	83.867	32,79
Värmland	288	85.399	33,72
Örebro	208	64.599	32,20
Västmanland	199	48.922	40,68
Kopparberg	247	70.616	34,98
Gävleborg	250	73.952	33,81
Västernorrland	282	69.143	40,79
Jämtland	93	35.269	26,37
Västerbotten	155	40.634	38,15
Norrbotten	102	37.120	27,48
	5.698	1.708.494	33,35

Evidemment. il y a dans ce tableau, lorsqu'on examine simultanément la colonne des décès et celle de la population, des taux absolus de décès assez bas: Gotland 57 personnes; Jämtland 93 personnes. D'autres paraissent assez élevés: Stockholmsstad 441 personnes. Cette dernière valeur provient du district qui renferme la capitale du royaume. C'est peut-être l'agglomération humaine même et tout ce qu'elle entraîne dans l'ordre des services hospitaliers, qui sont les raisons explicatives de ce taux élevé.

A l'égard de cette dernière supposition, nous constaterions ici un phénomène que n'ont jusqu'à présent montré ni la France, ni la Suisse. Peut-être s'agit-il simplement d'une statistique beaucoup plus serrée. Pour voir plus clair j'ai classé les provinces selon la valeur croissante de leur taux cancéreux.

Tableau N° 2.

ORDRE CROISSANT DES TAUX DE MORTATITÉ PAR LE CANCER.
(Personnes âgées d'au moins 40 ans.)

Jämtland	26,37
Kristianstad	26,39
Norrbotten	27,48
Gotland	27,58
Halland	28,32
Kronoberg	28,37
Malmöhus	29,63
Älvsborg	30,06
Kalmar	30,72
Jönköping	31,34
Blekinge	32,09
Örebro	32,20
Skaraborg	32,79
Östergötland	32,81
Värmland	33,72
Göteborg och Bohus	33,77
Gävleborg	33,81
Kopparberg	34,98
Södermanland	37,24
Upsala	37,93
Västerbotten	38,15
Stockholms län	38,31
Västmanland	40,68
Västernorrland	40,79
Stockholms stad	42,65

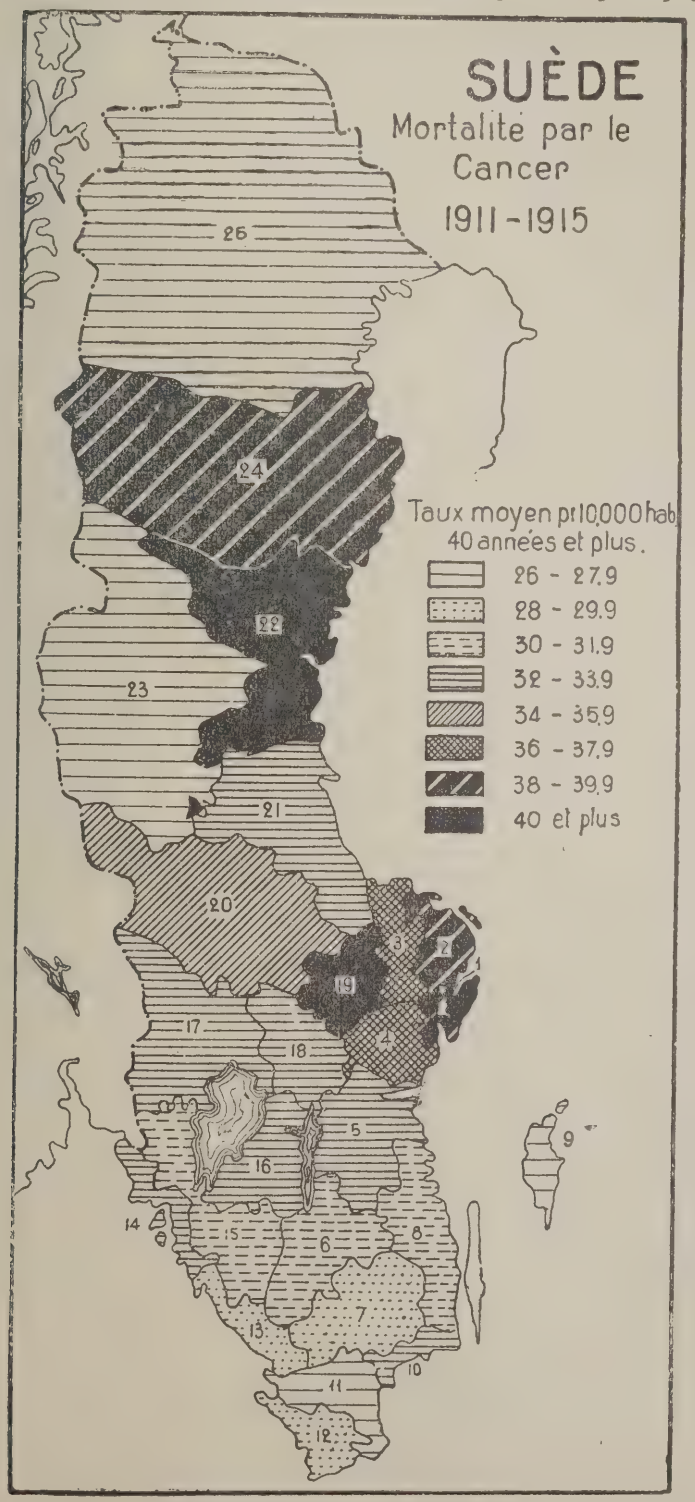
Cet arrangement en ordre croissant, mieux que n'importe quel autre, montre que le cancer est assez inégalement répandu en Suède. La différence quantitative entre les deux extrémités de la colonne va presque du simple ou double, et l'on voit s'entremêler des districts plus ou moins citadins et des districts plus ou moins ruraux montrant que l'influence citadine invoquée ci-dessus ne jouera pas forcément un rôle qui élévera les taux cancéreux.

La repartition géographique (carte N° 20) des maxima ou des minima ne montre aucune régularité. Nous constatons de faibles districts cancéreux au nord, le Norbotten; au centre, le Jämtland; au sud, le Kronoberg. Les plus forts pourcentages, nous les rencontrons aussi bien vers le centre du royaume, Stockholms stad ou Västmanland, que dans le district plus nordique de Västernorrland.

Cartogramme N° 20.

SUÈDE.

Répartition géographique de la mortalité par le cancer parmi la population âgée de 40 ans et plus, période 1911-1915.



LISTE
DES DÉPARTEMENTS
DE LA SUÈDE

arrangées selon la numérotation employée dans la figure ci-contre.

1. Stockholm-Ville
2. Stockholm
3. Upsala
4. Södermanland
5. Östergötland
6. Jönköping
7. Kronoberg
8. Kalmar
9. Gotland
10. Blekinge
11. Kristianstad
12. Malmöhus
13. Halland
14. Göteborg & Bohus
15. Älvsborg
16. Skaraborg
17. Värmland
18. Örebro
19. Västmanland
20. Kopparberg
21. Gävleborg
22. Västernorrland
23. Jämtland
24. Västerbotten
25. Norbotten.

Les districts bordés par la mer sont aussi bien touchés par de fortes mortalités cancéreuses que les districts intérieurs. Et, si le massif cancéreux de l'est est composé par quatre des cinq districts touchant la mer, nous trouvons au sud de la Suède un autre massif, faiblement cancéreux celui-là, composé de quatre districts et trois sont aussi marins.

Les endroits de fortes agglomérations humaines ne paraissent pas plus riches en cancer que les endroits où les populations sont plus clairsemées. Si le groupe très peuplé du centre-est qui comprend les grandes villes de Stockholm, Upsala, etc., figure dans la catégorie des taux plus élevés, le groupe méridional où nous trouvons les villes de Kristianstad, Malmö, Lund, Landskrona, etc., figure dans la catégorie des moins touchés par la maladie. Il semble donc que nous pouvons éliminer de notre horizon le fait de la concentration des malades sur certains territoires, — ici territoires de grandes villes — venant augmenter artificiellement les taux de ceux-ci, alors que, par contre-coup, elle diminuerait les taux des territoires environnants.

2. Les caractères anthropologiques principaux de la Suède.

Les collections anthropologiques de la Péninsule scandinave renferment, pour représenter la physionomie ethnique de cette région dès les temps anciens, d'importants documents. Ils proviennent de l'âge de la pierre, puis des âges du bronze et du fer. Le bel ouvrage que Retzius a consacré aux crânes suédois [1] nous permet d'avoir une connaissance assez complète de ces restes humains. Grâce à cette étude, nous possédons l'état ethnique des deux royaumes au cours des trois civilisations indiquées ci-dessus, base solide pour les comparaisons avec la population vivante. Jetons un rapide coup d'œil sur cet inventaire.

A l'âge de la pierre, la population est franchement de caractère dolichocéphalique: les dolichocéphales et les sous-dolichocéphales additionnés forment une proportion d'environ 67 pour 100. Par contre les types brachycéphales sont rares (6 %). La population de cette époque est déjà métissée, on compte 26 pour 100 de types mésaticéphales.

A l'âge du bronze, la masse dolichocéphale augmente ses effectifs jusqu'à posséder 75 pour 100 de représentants. Ceux-ci continueront à progresser. A l'âge du fer, ils seront plus du 87 pour 100. Quelques sous-brachycéphales existent à côté d'eux: 10 pour 100 à l'âge du bronze; 12 pour 100 à l'âge du fer. La constatation d'une pareille continuité n'est-elle pas en opposition avec les théories archéologiques qui voudraient qu'à chaque civilisation nouvelle apparue en Scandinavie, il y eût remplacement de la population précédente (mais que serait-elle devenue ?... Se serait-elle évanouie ?...) par celle qui apportait la culture la plus récente.

Ces hommes aux crânes allongés dont l'origine est encore inconnue, lorsque les territoires scandinaves furent libérés des glaces quaternaires, s'avancèrent très probablement par le Jutland et les îles danoises vers la Sandinavie méridionale. Ces Dolichocéphales néolithiques d'origine septentrionale, comme les appelait Hamy, ont jalonné de leurs sépultures le chemin qu'ils ont suivi. La carte que Montelius a dressée des tombes de l'âge de la pierre en Suède, et leur abondance relative selon les lieux peut servir à montrer le mouvement de cette population préhistorique.

Cette race de dolichocéphales de haute stature, mêlée à quelques brachycéphales, et qui compose, dès l'âge de la pierre, la population scandinave a-t-elle maintenu à l'heure actuelle ses contingents ?

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[1] Gust. Retzius: *Finska Cranier*, etc., Stockholm, 1878.

Dans un ouvrage capital[1], G. Retzius et Fürst ont exposé ce que nous savons des caractères anthropologiques de la Suède. Il suffit de renvoyer à ce volume les personnes désireuses de documents détaillés. Nous extrairons de cette œuvre essentielle seulement les éléments nécessaires à notre travail.

Mais, dès maintenant, le lecteur doit remarquer que la répartition des provinces en Suède n'est pas la même si l'on consulte les tableaux contenant les taux de mortalité fournis par le Bureau d'hygiène, ou l'ouvrage de Retzius et Fürst [2].

La taille.

La stature moyenne des Suédois est élevée. Elle dépasse 1 m. 71. Cette haute taille n'est pas une apparence arithmétique. Nous en avons la preuve dans ce seul fait qu'il y a plus de 60 pour 100 d'individus dont la taille dépasse 1 m. 70. Qu'on s'adresse à n'importe quelle région du Royaume suédois, on y retrouve toujours des hommes de haute stature. Peu de pays présentent une pareille uniformité dans l'espace (carte N° 21), preuve nouvelle à l'appui de ce que nous avons dit relativement à l'unité raciale de la Scandinavie à toutes les époques de l'histoire. Une seule province montre une stature au-dessous de 1 m. 70; c'est, tout au nord, le Lappland, où il est probable qu'un peu de sang lapon (hommes de très petite taille) est intervenu et peut-être aussi un peu plus de sang finnois que dans les autres provinces.

Voici la répartition de la taille en Suède selon Retzius et Fürst.

Tableau N° 3.

LA TAILLE EN SUÈDE SELON LES PROVINCES, INDIQUÉE EN ORDRE CROISSANT ET SELON LA TERMINOLOGIE GÉOGRAPHIQUE DE RETZIUS ET FÜRST.

Lappland	169,1
Blekinge	170,0
Skåne	170,3
Västerbotten	170,3
Västmanland	170,3
Östergötland	170,4
Närke	170,5
Halland	170,5
Upland	170,7
Dalarna	170,8
Småland	170,8
Värmland	170,9
Ångermanland	171,1
Södermanland	171,2
Gästrikland	171,2
Öland	171,2
Västergötland	171,4
Dalsland	171,5
Medelpad	171,5
Jämtland	171,7
Bohuslän	172,1
Hälsingland	172,3
Härjedalen	172,6
Gotland	172,7

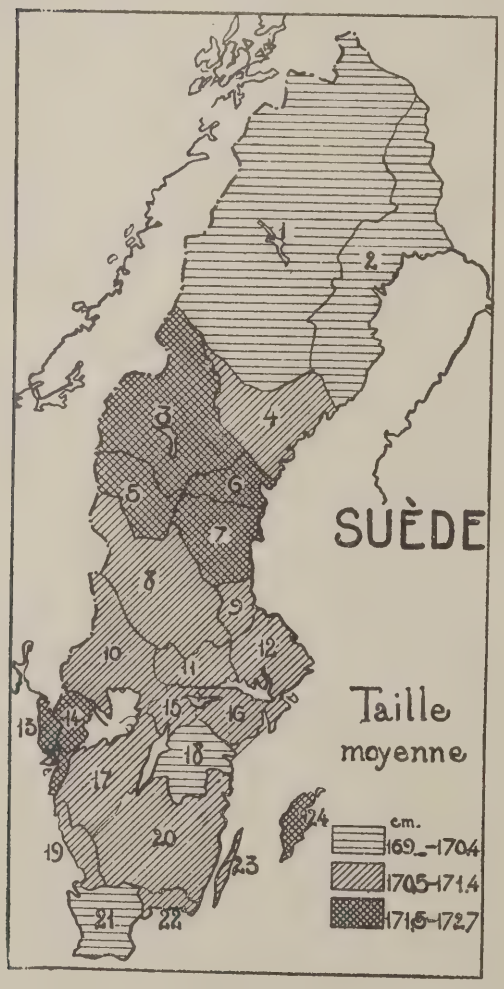
[1] G. RETZIUS et C. FÜRST: *Anthropologia Suecica*, Stockholm, 1902.

[2] Nous indiquerons plus loin les modifications qu'il faut apporter au moment où l'on utilise comparativement ces deux documents.

Cartogramme N° 21.

SUÈDE.

Répartition géographique de la taille moyenne.



LISTE DES SUBDIVISIONS (HISTORIQUES) DE LA SUÈDE

arrangées selon la numérotation employée dans les cartogrammes N° 21 à N° 25.

1. Lappland
2. Västerbotten
3. Jämtland
4. Ångermanland
5. Härjedalen
6. Medelpad
7. Hälsingland
8. Dalarna
9. Gästrikland
10. Värmland
11. Västmanland
12. Upland
13. Bohuslän
14. Dalsland
15. Närke
16. Södermanland
17. Västergötland
18. Östergötland
19. Halland
20. Småland
21. Skåne
22. Blekinge
23. Öland
24. Gotland

Les très hautes statures se rencontrent aussi bien dans les provinces maritimes (Gotland, Bohuslän) qu'en plein dans l'intérieur des terres (Härjedalen); aussi bien au niveau de la mer que dans les zones comprises entre 500 et 1.000 mètres.

En examinant rapidement la carte de la répartition du cancer, on constate que les régions habitées par des hommes de très haute stature ne paraissent pas être celles qui sont les plus touchées par le fléau.

Le pourcentage des hautes statures dressé par Retzius et Fürst est peut-être encore plus significatif que l'indication donnée par les tailles moyennes. Ils ont cherché, pour chaque province, la quantité d'individus dont la taille dépasse 1 m. 70 (carte N° 22). Nous retrouvons une image fidèle de ce qu'a montré la répartition des tailles moyennes elles-mêmes. Les provinces de plus haute stature sont celles qui ont le plus haut pourcentage d'individus dépassant 1 m. 70.

Tableau N° 4.

POURCENTAGE DES GRANDES TAILLES.

(Dès 1 m. 70 et au delà.)

Lappland	46,–	Närke	56,3
Blekinge	53,7	Upland	57,7
Västerbotten	54,6	Dalarna	58,4
Östergötland	55,–	Småland	58,7
Västmanland	55,2	Värmland	60,1
Skåne	55,3	Södermanland	61,1
Halland	56,1	Öland	61,3

Ångermanland	61,4
Västergötland	62,–
Dalsland	63,1
Jämtland	64,6
Gästrikland	64,8
Medelpad	64,8
Bohuslän	68,3
Härjedalen	69,1
Hälsingland	69,6
Gotland	70,1

En dehors du Lappland, toutes les provinces de la Suède ont des hommes qui, en majorité, dépassent 1 m. 70. Dans l'île de Gotland, plus du 70 % des hommes atteignent et dépassent ce chiffre.

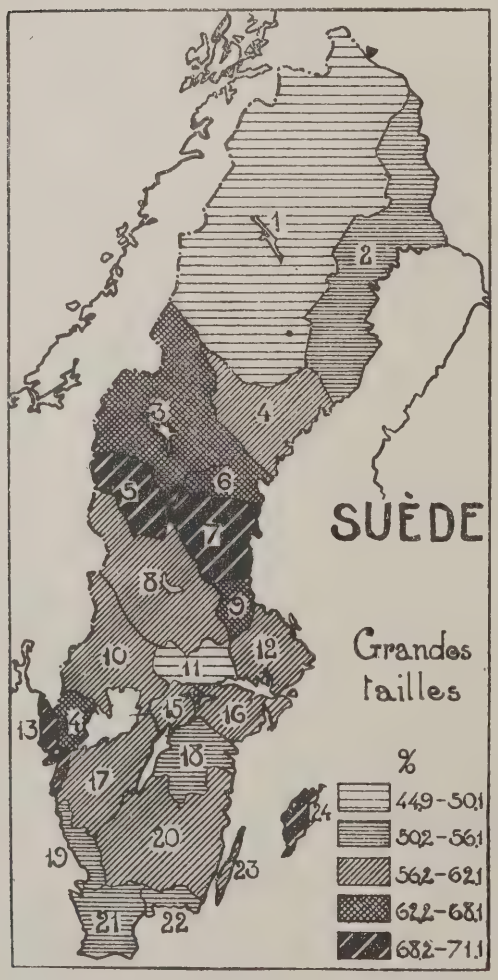
L'indice céphalique.

L'enquête de Retzius et Fürst au sujet de ce caractère a porté sur une quantité considérable d'observations et nous pouvons la considérer comme représentant — dans ses grandes lignes — l'état exact de la morphologie cranienne des Suédois. Les réserves qui peuvent être faites quant à l'utilisation actuelle de ces documents concernent l'obligation dans laquelle on s'est trouvé de répartir ces caractères dans les limites artificielles des districts. Mais, pour l'heure, il ne peut pas en être autrement.

Cartogramme N° 22.

SUÈDE.

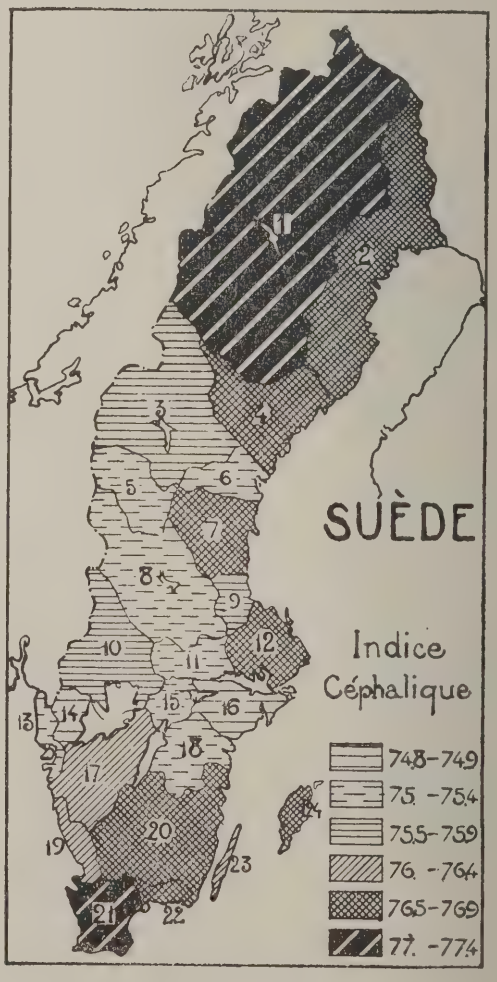
Répartition géographique de la proportion des grandes tailles
(d'après Retzius et Fürst).



Cartogramme N° 23.

SUÈDE.

Répartition géographique de l'indice céphalique
(d'après Retzius et Fürst).



Voici la liste des provinces avec, en regard, la valeur de leur indice céphalique:

Tableau N° 5.

Provinces	Indices céphaliques moyens
Skåne	77,0
Blekinge	76,5
Öland	76,1
Gotland	76,8
Småland	76,5
Halland	76,3
Västergötland	76,0
Östergötland	75,2
Södermanland	74,8
Närke	75,3
Dalsland	74,9
Bohuslän	75,1
Värmland	75,5
Västmanland	75,3
Upland	76,9
Gästrikland	75,7
Dalarna	75,2
Hälsingland	76,9
Härjedalen	75,8
Medelpad	75,2
Jämtland	75,7
Ångermanland	76,7
Lappland	77,5
Västerbotten	76,9

Les indices céphaliques moyens s'échelonnent de 74,8 et 74,9 (provinces de Södermanland et de Dalsland) à 77,5 (Lappland). Malgré que d'autres provinces montrent des valeurs moyennes peu différentes de celles du Lappland, on voit surgir ici, de nouveau, l'influence laponne que nous avons déjà signalée à propos de la stature. Les tailles les moins élevées et les crânes les plus arrondis se rencontrent sur ce territoire.

Les mêmes valeurs d'indice céphalique moyen ne se répartissent pas selon un ordre géographique particulier (carte N° 23). A l'extrême nord et à l'extrême sud de la Suède on trouve des crânes de même morphologie. La Suède, dans son ensemble, est nettement dolichocéphale. Son indice céphalique moyen est 75,85. C'est dans la région centrale du Royaume que se trouve la concentration des types les plus dolichocéphales. Douze provinces (selon la terminologie de Retzius et Fürst) montrent des indices qui ne dépassent pas 75,84. Au sud des Grands Lacs et au nord de la province de Jämtland, nous trouvons des indices plus élevés. Deux provinces sont enclavées dans la zone la plus dolichocéphale: Upland 76,9, et Hälsingland — également 76,9.

Les indices moyens voilent souvent les réalités sous des apparences. Lorsqu'on examine les pourcentages des divers types craniens, on s'aperçoit que si la majorité des provinces gardent le rang que leur a assigné l'indice céphalique moyen, il en est deux

ou trois qui le perdent. C'est pourquoi nous mettons sous les yeux du lecteur le tableau suivant:

Tableau N° 6.

POURCENTAGE DES DOLICHOCÉPHALES ET DES BRACHYCÉPHALES EN SUÈDE, ARRANGÉ SELON L'ORDRE DÉCROISSANT DES DOLICHOCÉPHALES.

Provinces	Dolicho.	Brachy.	Dolicho. vrais.	Mésoc.
Dalsland	95,14	4,86	45,14	50,00
Södermanland	94,97	5,03	46,85	48,12
Dalarna	92,83	7,17	43,62	49,21
Härjedalen	92,55	7,45	32,98	59,57
Närke	92,49	7,51	41,17	51,32
Västmanland	92,08	7,92	38,37	53,71
Värmland	91,89	8,11	37,61	54,28
Bohuslän	90,63	9,37	31,50	59,13
Öland	90,08	9,92	28,57	61,51
Jämtland	89,99	10,01	37,05	52,94
Medelpad	89,88	10,12	31,61	58,27
Hälsingland	89,73	10,27	32,81	56,92
Gästrikland	89,40	10,60	33,49	55,91
Västergötland	88,55	11,45	30,54	58,01
Stockholm	88,46	11,54	30,19	58,27
Östergötland	87,74	12,26	34,54	53,20
Halland	85,79	14,21	27,10	58,69
Blekinge	84,92	15,08	23,70	61,22
Gotland	84,75	15,25	20,13	64,62
Småland	84,25	15,75	25,54	58,71
Ångermanland	81,95	18,05	25,97	55,98
Skåne	81,40	18,60	18,71	62,69
Västerbotten	80,97	19,03	21,07	59,90
Upland	79,02	20,98	23,94	55,08
Lappland	76,33	23,67	16,94	59,39

Les provinces les plus marquées de dolichocéphalie ont un pourcentage extraordinairement élevé d'individus présentant ce type, atteignant, dans le cas le plus net (Dalsland), plus de 95 %. Le territoire le plus mélangé est le Lappland; nous en savons les raisons. Après lui viennent les provinces d'Upland, Västerbotten, Skåne, Ångermanland, Småland. Ces provinces sont toutes maritimes. Elles sont toutes — celle de Skåne un peu moins — tournées vers l'ancienne Russie. La proportion des types dolichocéphales varie de 79,02 % (Upland) à 84,25 % (Småland). Les autres provinces maritimes du sud-ouest: Halland, Västergötland, Bohuslän, sont moins contaminées de brachycéphalie. Dans ces provinces, le pourcentage des dolichocéphales — non pas des dolichocéphales vrais seulement — varie de 85,79 % (Halland) à 90,63 % dans le Bohuslän. Les quatre provinces qui sont frontières de la Norvège ont des pourcentages de dolichocéphalie plus élevés — le Lappland naturellement mis à part. Le pourcentage minimum est de 89,99 % dans le Jämtland. Il se poursuit de la façon suivante: Värmland 91,89 %. Härjedalen 92,55 %, Dalarna 92,83 %, Dalsland 95,14 %. Les populations étrangères au type initial ne se sont guère établies au delà des côtes, des grandes cités, des centres industriels.

Jusqu'à présent, les Suédois nous apparaissent donc comme des hommes de haute stature, en très grande majorité dolichocéphales.

La couleur des cheveux et des yeux en Suède.

Retzius et Fürst ont dressé le bilan des types clairs et des types foncés. Dans la première carte, ils présentent les quantités respectives de types clairs *(hellen typus)*, c'est-à-dire des hommes ayant les yeux clairs et les cheveux blonds (carte N° 24). Les provinces les plus riches de ce type sont celles du centre et du sud. Les plus pauvres sont celles du nord. Les proportions les plus élevées sont dans les provinces de Dalsland (60 %), Västergötland (60 %) et Västmanland (59,4 %). Les proportions les moins élevées sont dans les provinces de Lappland (37,2 %), ce qui paraît naturel quand on sait l'état de pigmentation des Lapons, et dans la province de Hälsingland (37,6 %) ce qui paraît tout de même curieux.

Lorsqu'aux cheveux blonds s'ajoutent, comme phénomène de pigmentation, des yeux bruns, nous voyons quelques changements s'opérer dans la géographie de cette répartition. Les provinces peuplées d'habitants au type clair demeurent, avec ce nouvel arrangement, à peu près les mêmes. Quelques-unes dans le centre du royaume, désertent leur place

En résumé, la Suède est peuplée par une majorité d'individus ayant les cheveux blonds et les yeux clairs.

* * *

Après ce rapide coup d'œil sur les principales caractéristiques morphologiques et descriptives de la Suède, nous allons rapprocher de celles-ci, dans l'ordre de leur examen même, les taux de mortalité par cancer.

3. Rapports supposés entre la race et le cancer.

Nous avons dit que Retzius et Fürst n'ont pas divisé la Suède en mêmes compartiments administratifs que la statistique des taux cancéreux. Le lecteur a déjà pu s'en apercevoir en consultant la liste des taux cancéreux et celles où figurent les chiffres de la taille ou de l'indice céphalique. Il faut donc opérer des corrections, sans lesquelles certains résultats seraient incompréhensibles.

Tableau N° 7.

Provinces selon Retzius et Fürst	*Départements selon le tableau des taux de mortalité*
Skåne	Kristianstad, Malmöhus
Blekinge	Blekinge
Öland	Öland
Gotland	Gotland
Småland	Jönköping, Kronoberg, Kalmar
Halland	Halland
Västergötland	Partie sud d'Älvsborg, Skaraborg
Bohuslän	Bohuslän
Dalsland	Partie nord d'Älvsborg
Värmland	Värmland
Östergötland	Östergötland
Närke	Örebro
Södermanland	Södermanland
Västmanland	Västmanland
Upland	Stockholms stad, Stockholms län, Upsala
Dalarna	Kopparberg
Gästrikland	Partie sud de Gävleborg
Hälsingland	Partie nord de Gävleborg
Härjedalen, Jämtland	Jämtland
Medelpad	Partie sud de Västernorrland
Ångermanland	Partie nord de Västernorrland
Västerbotten	Partie orientale maritime de Västerbotten et de Norrbotten
Lappland	Partie occidentale de Västerbotten et de Norrbotten

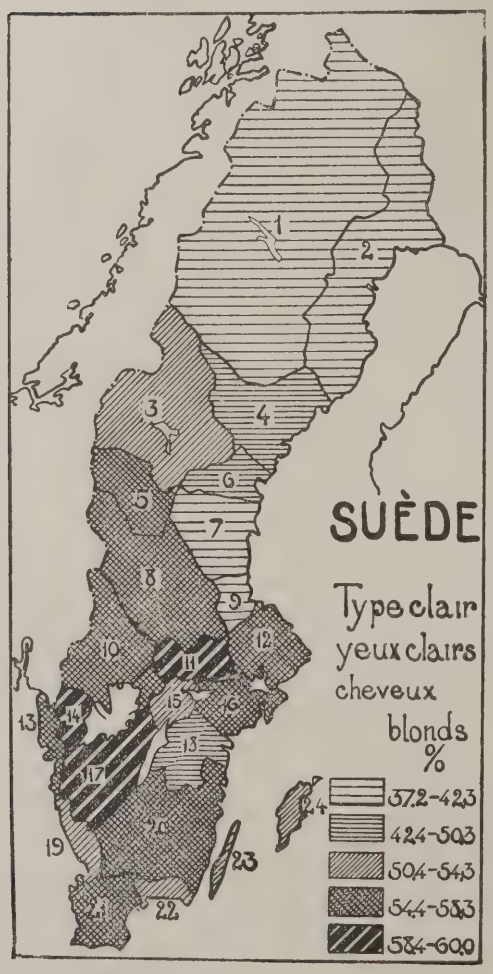
Un tel arrangement n'est pas pour simplifier notre travail. Il est même probable que, par lui, nous serons plusieurs fois arrêtés dans nos comparaisons.

Cartogramme N° 24.

SUÈDE.

Répartition géographique de la proportion d'individus du type clair (yeux clairs, cheveux blonds)

(d'après Retzius et Fürst).



Exposé des principales caractéristiques anthropologiques selon les provinces.

Dans un premier tableau je fais figurer, à côté des noms de provinces selon la terminologie de Retzius et Fürst (avec en regard la terminologie acceptée pour les taux cancéreux), les trois caractères importants de la stature, de la forme cranienne et de la coloration (ici le type clair, aux cheveux blonds et aux yeux clairs). Cet exposé préliminaire a pour but de prendre un premier contact avec les caractéristiques anthropologiques générales du royaume. L'analyse même de ces documents viendra plus tard.

Tableau N° 8.

Provinces selon Retzius et Fürst	Départements selon les statistiques des taux cancéreux.	Taille moyenne	Indice céphalique moyen	Pourcentage du type clair: cheveux blonds, yeux clairs
Skåne . . . . . =	Kristianstad	170,3	77,–	58,1
	Malmöhus			
Blekinge . . . . . =	Blekinge	170,–	76,5	53,5
Gotland . . . . . =	Gotland	172,7	76,8	50,9
Öland . . . . . =	Öland.	171,2	76,1	54,7
	Jönköping.			
Småland . . . . . =	Kronoberg	170,8	76,5	58,1
	Kalmar			
Halland . . . . . =	Halland.	170,5	76,3	52,1
Västergötland . . . =	Älvsborg Sud	171,4	76,–	60,–
	Skaraborg.			
Bohuslän . . . . . =	Bohuslän	172,1	75,1	55,8
Dalsland . . . . . =	Nord d'Älvsborg . . .	171,5	74,9	60,–
Värmland. . . . . =	Värmland	170,9	75,5	55,7
Östergötland . . . =	Östergötland	170,4	75,2	50,–
Närke . . . . . =	Örebro	170,5	75,3	52,6
Södermanland. . . =	Södermanland	171,2	74,8	57,4
Västmanland . . . =	Västmanland	170,3	75,3	59,4
	Stockholms stad . . .			
Upland. . . . . =	Stockholms län . . .	170,7	76,9	57,9
	Upsala			
Dalarna . . . . . =	Kopparberg	170,8	75,2	56,8
Gästrikland . . . . =	Partie sud Gävleborg .	171,2	75,7	41,–
Hälsingland. . . . =	Partie nord Gävleborg.	172,3	76,9	37,6
Härjedalen . . . }		172,6	75,7	55,3
=	Jämtland	172,2 {	75,8 {	54,2 {
Jämtland. . . . }		171,7	75,8	53,1
Medelpad. . . . . =	Partie sud Västernorrland	171,5	75,2	43,6
Ångermanland. . . =	Partie nord Västernorrland	171,1	76,7	44,3
Västerbotten . . . =	Partie orientale maritime Västerbotten et Norrbotten . .	170,3	76,9	38,8
Lappland. . . . . =	Partie occidentale Västerbotten et Norrbotten	169,1	77,5	37,2

Après ce coup d'œil général, examinons successivement, avec quelques détails ces divers caractères en fonction des taux de mortalité. Nous conserverons l'ordre adopté dans les pages précédentes.

La stature et le cancer.

Tableau N° 9.

Provinces	Stature moyenne selon l'ordre croissant	Taux de mortalité
Lappland	169.1	27.48
Blekinge	170.–	32.09
Skåne	170.3	28.01
Västmanland	170.3	40,68
Västerbotten	170,3	38,15
Östergötland	170,4	32,81
Halland	170,5	28,32
Närke	170,5	32,20
Upland	170,7	39,60
Småland	170,8	30,14
Dalarna	170,8	34,98
Värmland	170,9	33,72
Ångermanland	171,1	40,79
Öland	171,2	—
Södermanland	171,2	37,24
Gästrikland	171,2	33,77
Västergötland	171,4	31,43
Dalsland	171,5	30,06
Medelpad	171,5	40,79
Jämtland	171,7	26,37
Bohuslän	172,1	—
Hälsingland	172,3	33,77
Härjedalen	172,6	26,37
Gotland	172,7	27,38

Plusieurs de ces moyennes, du fait du double arrangement provincial inégal, appellent une explication particulière.

C'est ainsi que le taux cancéreux moyen de la province d'Upland (selon Retzius et Fürst): 39,60 est constitué par les taux suivants:

Upland	Stockholms stad	42,65	39,60
	Stockholms län	38,31	
	Upsala	37,93	

montrant entre eux d'assez fortes différences.

Il en est de même pour le taux moyen (30,14) de la province de Småland (selon Retzius et Fürst):

Småland	Jönköping	31,34	30,14
	Kronoberg	28,37	
	Kalmar	30,72	

et celui (28,01) de la province de Skåne:

Skåne	Kristianstad	26,39	28,01.
	Malmö	29,63	

D'autre part, j'ai été obligé, lorsque la même province avait été subdivisée et se retrouvait sous deux noms différents, d'ajouter à la suite de ceux-ci, le même taux de mortalité.

Il y aurait donc à envisager plus de précision encore que nous n'en pouvons donner dans cet examen des taux de mortalité en fonction des caractères anthropologiques. Mais nous n'avons pas les moyens d'aller au delà de ce que nous avons fait.

A l'aide du tableau N° 9, j'ai constitué deux groupes de statures: l'un de 1 m. 691 à 1 m. 705; l'autre de 1 m. 707 à 1 m. 727 et j'ai mis en regard les taux de mortalité.

J'obtiens, par ce moyen, les résultats suivants:

	Taille	*Taux de mortalité*
1er groupe .	1m.701	32,47
2me » .	1m.715	33,32

Il semblerait qu'en Suède les populations dont les tailles sont les plus élevées présentent en même temps un plus fort pourcentage de cancer. Mais avec un petit nombre de provinces comme celui dont nous disposons, il serait facile d'opérer des arrangements qui effaceraient peut-être le résultat ci-dessus. Nous essayons un autre groupement en arrêtant la taille maximum du premier contingent départemental à 1 m. 709.

	Taille	*Taux de mortalité*
1er groupe .	1m.704	33,18
2me » .	1m.715	31,79

Cet arrangement renverserait le résultat précédent acquis.

Il y a, dans le premier groupe, deux départements dont les taux de cancer sont particulièrement élevés: Västmanland 40,68, Västerbotten 38,15. Ils occupent deux régions assez lointaines l'une de l'autre du royaume. Le premier, qui est terrien, est dans la région du centre, à l'occident de Stockholm. Le second, au nord, vers le fond du golfe de Bothnie, est une province maritime.

Si l'on élimine ces deux maxima (Upland en représente un autre (39,60) mais il a une stature plus haute), le premier groupe apparaît avec les moyennes suivantes:

Taille	*Taux de mortalité*
1m.704	31,95

Dans ce cas, le taux moyen de mortalité est égal à celui du deuxième groupe.

Le facteur stature envisagé seul ne semble pas susceptible de donner aucune lumière, au moins pour ce qui touche à l'intérieur même de la Suède. C'est que nous sommes dans un pays où toutes les populations sont de haute stature, et que les variations de la taille ne sont pas ici des variations ethniques réelles.

En éliminant quelques provinces peuplées d'étrangers à la race nordique (le Lappland) ou touchées plus facilement par les émigrations étrangères (Skåne, Blekinge) nous voyons que les tailles départementales sont toutes comprises entre 1 m. 703 et 1 m. 727.

On doit faire encore cette remarque que parmi les départements à plus haute stature nous trouvons des taux de mortalité relativement faibles. Ainsi dans les départements de Jämtland, Härjedalen, Gotland.

L'indice céphalique moyen selon les provinces et les taux de mortalité.

Tableau N° 10.

Södermanland	74,8	37,24
Dalsland	74,9	30,06
Bohuslän	—	—
Dalarna	75,2	34,98
Medelpad	75,2	40,79
Östergötland	75,2	32,81
Västmanland	75,3	40,68
Närke	75,3	32,20
Värmland	75,5	33,72
Gästrikland	75,7	33,77
Jämtland	75,7	26,37
Härjedalen	75,8	26,37
Västergötland	76,–	31,43
Öland	—	—
Halland	76,3	28,32
Småland	76,5	30,14
Blekinge	76,5	32,09
Ångermanland	76,7	40,79
Gotland	76,8	27,58
Upland	76,9	39,60
Hälsingland	76,9	33,77
Västerbotten	76,9	38,15
Skåne	77,–	28,01
Lappland	77,5	27,48

Le tableau N° 10 montre les indices céphaliques rangés selon leur valeur numérique croissante. En établissant deux groupes de onze termes chacun (le premier comprend les indices céphaliques de 74,8 à 75,8, le second ceux de 76 à 77,5), nous constatons les faits suivants:

	Indice céphalique moyen	*Taux de mortalité*
Premier groupe . . .	75,32	33,54
Deuxième groupe . .	76,73	32,48

Les plus touchés de dolichocéphalie paraissent être ceux qui possèdent le plus haut taux de mortalité. En composant deux groupes comparatifs avec les cinq départements les plus dolichocéphales et les cinq départements les moins dolichocéphales, nous trouvons:

	Indice céphalique moyen	*Taux de mortalité*
Premier groupe . . .	74,6	35,16
Deuxième groupe . .	77,04	33,40

Ce résultat confirme celui précédemment indiqué.

Il semble que les départements dont les populations sont les moins dolichocéphales, soient moins touchés par le cancer que les départements dont les habitants ont des crânes plus allongés.

Les provinces qui possèdent les indices céphaliques les plus élevés occupent, sur la carte, les deux extrémités de la Suède; Lappland au nord (77,5), et Skåne au sud (77);

ils ont tous deux des taux de mortalité relativement bas. Ils ont tous les deux des statures relativement petites. Il suffit pour en être convaincu de se reporter au tableau N° 9, où on les verra figurer en tête (avec Blekinge) de celui-ci.

Si nous voulions hâtivement conclure à l'aide de ces deux ou trois départements seulement, nous dirions que les régions où la population a la plus petite taille et le crâne le moins dolichocéphale sont celles qui sont les moins atteintes par le cancer.

Mais un tel examen ne suffit pas pour entraîner une conviction. Nous extrayons du tableau N° 10 les sept premiers termes et les sept derniers. Ils représentent, d'un côté, les pourcentages les moins grands, et, de l'autre, les pourcentages les plus grands de brachycéphalie. Nous mettons en regard les taux cancéreux:

	Pourcentage des brachycéphales	*Taux cancéreux*
1er groupe	6,86	33,62
2me groupe	16,62	33,10

Avec ce procédé, c'est à peine si nous constatons une légère diminution du taux cancéreux en fonction du pourcentage plus élevé des brachycéphales.

Mais c'est tout de même une confirmation des résultats exprimés ci-dessus. Il est vrai que nous n'avons pas le droit d'en tirer de bien profondes conclusions.

Il est possible qu'une discrimination plus précise, à la fois des caractères anthropologiques et des taux de mortalité, permettrait de constater, avec plus de netteté, que les types les moins dolichocéphales et les moins grands sont moins atteints par le cancer, mais une telle discrimination est impossible avec les documents qui nous sont présentés.

Pour multiplier les comparaisons et éviter si possible les causes d'erreurs, j'ai choisi, au fur et à mesure de la valeur décroissante de leur taux de mortalité, les dix provinces qui possèdent les plus forts taux et j'ai placé en regard de ces taux de mortalité le pourcentage des dolichocéphales (indice céphalique inférieur à 80); des brachycéphales (indice céphalique supérieur à 80); des dolichocéphales vrais (indice céphalique inférieur à 75); et des mésocéphales (indice 75 à 80). De telles subdivisions apporteront peut-être un peu plus de clarté.

Tableau N° 11.

L'INDICE CÉPHALIQUE DANS LES PROVINCES QUI ONT LES PLUS FORTS TAUX DE MORTALITÉ.

Provinces.	Taux de mortalité.	Dolichocéph.	Brachycéph.	Dolichocéph. vrais.	Mésocéph.
Medelpad . .	40,79	89,88	10,12	31,61	58,27
Ångermanland	40,79	81,95	18,05	25,97	55,98
Västmaland .	40,68	92,08	7,92	38,37	53,71
Upland . . .	39,60	79,02	20,98	23,94	55,08
Västerbotten .	38,15	80,97	19,03	21,07	59,90
Södermanland	37,24	94,97	5,03	46,85	48,12
Dalarna . .	34,98	92,83	7,17	43,62	49,21
Hälsingland .	33,77	89,73	10,27	32,81	56,92
Gästrikland .	33,77	89,40	10,60	33,49	55,91
Värmland . .	33,72	91,84	8,11	37,61	54,28
Moyennes	*37,34*	*88,26*	*11,72*	*33,53*	*54,73*

A la suite, nous faisons figurer un autre tableau, composé des mêmes éléments morphologiques, établi sur la base des taux de mortalité les plus faibles.

Tableau N° 12.

Provinces	Taux de mortalité	Dolichocéph.	Brachycéph.	Dolichocéph. vrais	Mésocéph.
Härjedalen .	26,37	92,55	7,45	32,98	59,57
Jämtland . .	26,37	89,99	10,01	37,05	52,94
Lappland . .	27,48	76,33	23,67	16,94	59,39
Gotland . .	27,58	84,75	15,25	20,13	64,62
Skåne . . .	28,01	81,40	18,60	18,71	62,69
Halland . . .	28,32	85,79	14,21	27,10	58,69
Dalsland . .	30,06	95,14	4,86	45,14	50,00
Småland. . .	30,14	84,25	15,75	25,54	58,71
Västergötland	31,43	88,55	11,45	30,54	58,01
Blekinge . .	32,09	84,92	15,08	23,70	61,22
Moyennes	*28,78*	*86,36*	*13,63*	*27,78*	*58,58*

D'une manière générale, on peut constater que les taux de mortalité les plus élevés sont le fait des provinces où la population est en moyenne plus dolichocéphale, renferme plus de dolichocéphales vrais mais notablement moins de brachycéphales et de mésocéphales que les autres provinces. Le cancer semblerait donc, en confirmation de ce qui a été dit ci-dessus, atteindre plus durement les dolichocéphales vrais. Mais dans chacun de ces deux groupes nous trouvons des provinces qui représentent, à un point de vue ou à un autre, des faits exceptionnels. Ainsi le tableau des plus fortes mortalités contient trois provinces: Ångermanland, Upland, et Västerbotten qui renferment des proportions relativement élevées de types brachycéphales. Mais ça ne veut pas dire que ce ne sont pas simplement un plus grand nombre de dolichocéphales qui, en cette région, élèvent le taux de mortalité.

Et, dans le tableau des taux les moins élevés, deux provinces: Härjedalen et Dalsland renferment de faibles quantités de brachycéphales.

De telles constatations nous montrent que, si de l'examen des faits généraux envisagés de plusieurs manières il découle quelques constatations dont l'ordre est le même ici — augmentation du taux de mortalité en fonction d'une dolichocéphalie plus accentuée — il n'en reste pas moins que bien des exceptions surgissent dans ce qui semble devenir une règle.

La cause de ces troubles me paraît devoir être cherchée dans la composition même des documents que nous utilisons. Au lieu d'être des séries relativement pures, les populations des provinces suédoises représentent des complexes ethniques et nous ne pouvons pas savoir quel est l'élément ethnique qui, dans ce complexe, est le plus touché par le cancer.

Je ferai encore remarquer que dans les deux groupes composés avec les taux de mortalité les plus élevés et avec les taux de mortalité les moins élevés, le pourcentage des mésocéphales est plus grand que celui des dolichocéphales vrais et que celui des brachycéphales.

Les taux de mortalité par cancer en fonction de la couleur des yeux et des cheveux.

D'après la liste des taux de mortalité, j'ai établi le tableau suivant où les provinces sont rangées selon l'ordre croissant des types clairs.

Tableau N° 13.

Provinces	Types clairs	Indices céph	Tailles	Cancer
		Moins de 40%.		
Lappland	37,2	77,5	169,1	27,48
Hälsingland	37,6	76,9	172,3	33,77
Västerbotten	38,8	76,9	170,3	38,15
		De 40 à 50%.		
Gästrikland	41,–	75,7	171,2	35,77
Medelpad	43,6	75,2	171,5	40,79
Ångermanland	44,3	76,7	171,1	40,79
		De 50 à 54,9%.		
Östergötland	50,–	75,2	170,4	32,81
Gotland	50,9	76,8	172,7	27,58
Halland	52,1	76,3	170,5	28,32
Närke	52,6	75,3	170,5	32,20
Jämtland	53,1	75,8	171,7	26,37
Blekinge	53,5	76,5	170,–	32,09
Öland	54,7	76,1	171,2	—
		De 55 à 60%.		
Härjedalen	55,3	75,7	172,6	26,37
Värmland	55,7	75,5	170,9	33,72
Bohuslän	55,8	75,1	172,1	—
Dalarna	56,8	75,2	170,8	34,98
Södermanland	57,4	74,8	171,2	37,24
Upland	57,9	76,9	170,1	39,60
Småland	58,1	76,5	170,8	30,14
Skåne	58,1	77,–	170,3	28,01
Västmanland	59,4	75,3	170,3	40,68
Västergötland	60,–	76,–	171,4	31,43
Dalsland	60,–	74,9	171,5	30,06

Les quatre groupes provinciaux institués selon cet ordre croissant des types clairs montrent, selon l'arrangement adopté, des taux moyens variables de mortalité.

Pourcentage des types clairs	Indice céphalique	Taille	Cancer
Moins de 40%	77,10	170,6	33,13
40 à 50 %	76,49	171,3	38,45
50 à 54,9%	76,—	171,–	29,89
55 à 60 %	75,72	171,1	33,23

Les types les moins blonds ont un taux presque aussi élevé que les types les plus blonds. Le taux maximum se rencontre chez les groupes humains où les blonds représentent à peu près la moitié de la population C'est qu'il y a dans ce groupe, composé seulement de trois provinces, deux d'entre elles où les taux sont les plus élevés de toute la Suède. Si nous éliminions ces deux provinces, le taux de mortalité dans les deux subdivisions des types les moins clairs (moins de 40 % et de 40 à 50 %) tomberait à 33,29.

Les statures moyennes des groupes provinciaux ne suivent pas l'ordre croissant des types clairs. Le deuxième groupe, qui a la plus forte mortalité cancéreuse, présente, en même temps, la taille la plus élevée.

Les indices céphaliques moyens selon cet arrangement méritent de nous retenir un instant.

On remarquera que les individus les moins blonds sont en même temps les moins dolichocéphales et les moins grands. Nous retrouvons là les influences très nettes des populations de la Suède septentrionale mêlées et métissées de Lapons. En éliminant ce groupement spécial du nord nous constatons que l'indice céphalique moyen diminue au fur et à mesure que nous allons vers des pourcentages plus élevés de types clairs. Les moins dolichocéphales et les plus dolichocéphales présentent les taux de mortalité les plus élevés.

Pour porter plus loin ces comparaisons, voici une répartition des dolichocéphales vrais (indice céphalique inférieur à 74), de haute stature (1 m. 70) ayant les yeux clairs et les cheveux blonds, tels qu'ils ont été définis par Retzius et Fürst (carte N° 25). Nous inscrivons immédiatement à côté des pourcentages par provinces, les indications des taux de mortalité.

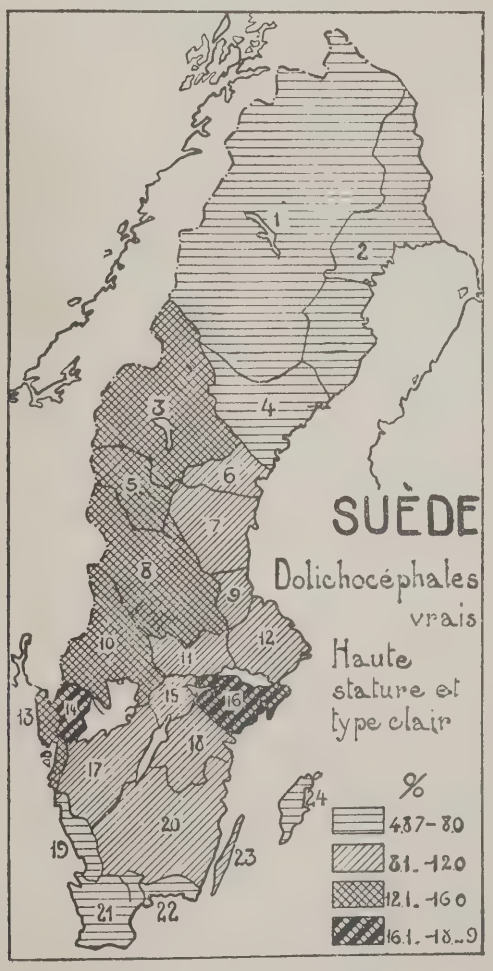
Tableau N° 14.

Provinces	Dolichocépales vrais	Taux de mortalité
Dalsland	18,3	30,06
Södermanland	16,2	37,24
Härjedalen	16	26,37
Dalarna	14,7	26,37
Värmland	13,2	33,72
Jämtland	12,6	26,37
Bohuslän	12,4	—
Närke	12,–	32,20
Västmanland	11,9	40,68
Västergötland	11,5	31,43
Gästrikland	10,–	33,77
Östergötland	9,8	32,81
Medelpad	9,7	40,79
Småland	9,–	30,14
Hälsingland	9,–	33,77
Upland	8,2	39,60
Halland	7,6	28,38
Blekinge	7,3	32,09
Ångermanland	6,8	40,79
Skåne	6,5	28,01
Västerbotten	5,1	38,15
Lappland	5,1	27,48
Norbotten	4,6	27,48

Cartogramme N° 25.

SUÈDE.

Répartition géographique de la proportion des dolichocéphales vrais (i.e. *indice céphalique au-dessous de 74*), *de haute stature (170 cm.) et de type clair*
(d'après Retzius et Fürst).



Si nous prenons les dix premiers termes de ce tableau et les dix derniers nous constatons que, dans les provinces ou le pourcentage de ces types à caractère nordiques complets est élevé, les taux de mortalité sont un peu moins hauts que dans les provinces où de tels types sont moins nombreux.

	Pourcentage des types figurant au tableau 14	*Taux de mortalité*
1er groupe	13,88	31,82
2me groupe	6,92	32,28

Un tel résultat semble en opposition avec d'autres résultats obtenus à peu près de la même façon, contenus dans les pages précédentes.

En composant deux groupes des cinq premières et des cinq dernières provinces de ce tableau nous obtenons:

	Pourcentage des types figurant au tableau 14	*Taux de mortalité*
1er groupe	15,68	32,35
2me groupe	5,82	32,38

Il y a égalité dans la valeur des taux cancéreux.

Pourcentage des petits brachycéphales.

Enfin, j'ai tenté une comparaison des provinces contenant les plus faibles et les plus forts pourcentages de petits brachycéphales (selon la terminologie de Retzius et Fürst) avec les taux de mortalité. Voici d'abord la répartition de ces individus selon la valeur croissante de leur nombre:

Tableau N° 15.

Provinces	Pourcentage des petits brachycéphales	Taux de mortalité
Dalsland	2,2	30,06
Södermanland	2,3	37,24
Hälsingland	3,0	33,77
Härjedalen	3,2	26,37
Dalarna	3,3	34,98
Bohuslän	3,4	
Närke	3,4	32,20
Värmland	3,5	33,72
Medelpad	3,5	40,79
Västmanland	3,7	40,68
Jämtland	3,9	26,37
Öland	4,4	
Gästrikland	4,9	33,77
Västergötland	5,0	31,43
Gotland	5,1	27,38
Östergötland	5,7	32,81
Halland	6,5	28,32
Småland	6,8	30,14
Blekinge	7,6	32,09
Ångermanland	8,0	40,79
Skåne	8,8	28,01
Västerbotten	9,3	38,15
Upland	9,8	39,60
Lappland	13,7	27,48

Les groupes à plus faibles et à plus forts pourcentages présentent les moyennes suivantes:

	Pourcentage des petits brachycéphales	*Taux moyen de mortalité*
1er groupe	3,20	33,61
2me groupe	8,13	32,47

Il semble que les provinces qui renferment les plus forts pourcentages de petits brachycéphales possèdent en même temps un peu moins de cancéreux ; mais la différence n'est pas grande.

Conclusions.

La répartition géographique du cancer en Suède montre d'assez grandes variations dans les taux de mortalité selon les provinces. La différence quantitative entre les extrêmes va presque du simple au double. Mais on ne distingue aucun arrangement géographique dans cette répartition. Les plus forts pourcentages de cancer se rencontrent aussi bien vers le centre du royaume que dans les districts plus nordiques. Les provinces maritimes sont aussi touchées que les provinces exclusivement terriennes.

Les endroits de forte agglomération humaine ne paraissent pas être plus riches en cancer que les endroits où les populations sont plus clairsemées. On pourrait composer à l'intérieur de la Suède des groupements de centres populeux dont les uns présenteraient des taux relativement très élevés, les autres relativement bas.

Dans leur grande majorité, les Suédois appartiennent à la racè nordique, de haute taille, dolichocéphale et blonde, aux yeux clairs. La stature est très élevée en Suède. Sauf le Lappland, elle atteint et dépasse 1 m. 70 dans toutes les provinces. Les très hautes statures ne sont pas localisées en un endroit spécial du royaume, on les trouve aussi bien dans les provinces maritimes que dans l'intérieur des terres, au niveau de la mer que dans les régions montagneuses.

Les indices céphaliques moyens marquent presque partout le caractère de dolichocéphalie. L'indice céphalique de la Suède est 75,85. C'est dans la région centrale du pays que la concentration des types dolichocéphales est la mieux définie. Les provinces les plus marquées de dolichocéphalie comme le Dalsland atteignent un pourcentage qui va jusqu'à 95 %.

Les Suédois sont des hommes faiblement pigmentés. La population du Royaume dans sa majorité possède des cheveux blonds et des yeux clairs.

Les recherches d'un rapport possible entre les caractères morphologiques et descriptifs et les taux plus ou moins élevés de cancer ont montré quelques faits intéressants.

Il semble qu'en Suède les populations dont les tailles sont les plus élevées présentent en même temps un plus fort pourcentage de cancer. Il semble qu'en Suède les individus les plus touchés de dolichocéphalie présentent en même temps les plus hauts taux de mortalité par cancer. Les provinces dont l'indice céphalique moyen est relativement élevé possèdent des taux cancéreux relativement bas.

Le classement des divers types craniens selon les subdivisions admises par Retzius et Fürst en dolichocéphales généraux, brachycéphales, dolichocéphales vrais, mésocéphales, semble confirmer ce qui vient d'être indiqué, à savoir que le cancer atteindrait

plus durement les dolichocéphales vrais. Les provinces qui renferment les plus forts pourcentages de petits brachycéphales montrent un peu moins de cancer que les autres.

Mais ces faits mêmes sont soumis à diverses critiques et il serait difficile de les accepter tels quels.

Toutes ces observations doivent être soumises à de nouveaux contrôles qu'avec nos documents actuels nous n'avons malheureusement pas le moyen de faire.

B. LA NORVÈGE.

L'histoire du peuplement de la Norvège ne présente pas exactement les mêmes phases que celles de la Suède. Alors que cette dernière rassemblait et conservait sur son territoire des populations presque uniquement dolichocéphales, la Norvège accueillait des brachycéphales relativement nombreux. Leur origine est un des beaux problèmes de l'anthropologie contemporaine[1].

C'est pourquoi il y a lieu de considérer séparément ces deux Etats.

Si nous devions envisager, en un coup d'œil synthétique, la totalité de la population norvégienne, il faudrait la décrire comme étant sous-dolichocéphale. Mais, sur ce fond commun, se détachent des teintes de véritable dolichocéphalie disposée parallèlement du nord au sud — Deniker a pu les dessiner sur sa carte — et des teintes de brachycéphalie, en certains points marquées nettement. Nous reparlerons de ces répartitions au moment où nous examinerons les caractères anthropologiques et descriptifs de cet Etat.

I. La mortalité par cancer en Norvège.

Les statistiques sanitaires publiées par le Gouvernement norvégien ont déjà permis d'établir des taux de mortalité selon diverses formes. On trouvera dans l'ouvrage de Hoffman les résultats d'enquêtes diverses, s'échelonnant de 1881 à 1912, sur la mortalité comparée, selon les sexes, et selon les organes atteints, de même qu'on y trouvera des comparaisons entre les taux des grandes villes et ceux du reste du pays.

Mais ces enquêtes, importantes par le nombre des cas considérés, n'ont pas été subdivisées selon les provinces, ce qui nous empêche de les utiliser dans cette présente étude.

Tout d'abord au point de vue d'ordre pratique:

La nomenclature des noms de provinces est loin d'être la même selon les atlas, et la recherche des synonymies fait perdre beaucoup de temps. Pour que le lecteur puisse s'orienter, j'ai dressé le tableau des noms de provinces tels qu'ils sont indiqués dans les statistiques des taux de mortalité par cancer et de leurs synonymes. A gauche du tableau sont les noms de provinces tels qu'ils figurent dans les cartes annexées à ce travail

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[1] La Suède, nous l'avons vu, possède aussi sur son territoire des populations brachycéphales.

Subdivisions de la Norvège.

Départements selon les statistiques des taux de mortalité		Synonymes
Akershus	=	Akershus
Buskerud	=	Buskerud
Bratsberg	=	Telemark
Finmarken	=	Finnmark
Hedemarken	=	Hedmark
Jarlsberg og Larvik	=	Vestfold
Kristians	=	Opland
Lister og Mandal	=	Vest-Agder
Nedenes	=	Aust-Agder
Nordland	=	Nordland
Nordre Bergenhus	=	Sogn og Fjordane
Nordre Trondhjem	=	Nord-Trøndelag
Romsdal	=	Møre
Smaalenene	=	Østfold
Søndre Bergenhus	=	Hordaland
Søndre Trondhjem	=	Sør-Trøndelag
Stavanger	=	Rogaland
Tromsø	=	Troms.

Voici maintenant l'arrangement par départements (tableau N° 1), des taux de mortalité par 10.000 habitants durant la période 1919-1921. Les deux sexes sont représentés.

Tableau N° 1.

MORTALITÉ PAR CANCER DANS LES DIFFÉRENTS DÉPARTEMENTS DE LA NORVÈGE, POUR 10.000 HABITANTS, PENDANT LA PÉRIODE 1919-1921.

(Population dès 40 ans.)

Départements	Hommes Taux moyens annuels p. 10.000	Femmes Taux moyens annuels p. 10.000	Moyenne générale Taux annuels par 10.000
Kristiania (Oslo)	35,96	37,68	36,94
Akershus	40,06	33,75	36,64
Østfold	37,44	34,91	36,03
Buskerud	38,49	36,69	37,55
Vestfold	39,09	35,92	37,37
Hedmark	37,83	36,22	36,92
Opland	36,45	32,19	34,06
Telemark	35,54	31,84	34,12
Aust-Agder	34,79	30,76	32,57
Vest-Agder	30,57	29,16	29,79
Rogaland	32,32	34,71	33,71
Hordaland	31,85	24,73	27,89
Bergen	36,51	43,60	40,55
Sogn og Fjordane	34,07	22,27	27,56
Møre	29,70	33,36	31,26
Sør-Trøndelag	33,81	36,53	35,20
Nord-Trøndelag	34,37	31,78	32,86
Nordland	27,63	20,73	24,02
Tromsø	32,92	27,11	29,81
Finnmark	36,45	21,73	28,84
Norvège	34,77	32,58	33,58

On constate des différences provinciales allant presque du simple (Nordland 24,02) au double (Bergen 40,55). Ces deux taux extrêmes appartiennent à des provinces maritimes, l'une au nord, l'autre au sud-ouest.

Il y a, selon les provinces, des différences sexuelles — dans le sens positif ou négatif — assez considérables. Quinze provinces, sur 20, présentent des taux féminins inférieurs aux taux masculins. Le plus grand écart entre les taux sexuels s'observe dans le Finmark, où la différence est de 15 unités en faveur des femmes. Serait-ce que les Lapons, nombreux en ces parages septentrionaux, montreraient un caractère ethnique de plus faible résistance masculine au cancer ? Faut-il invoquer d'autres causes ? Par exemple, la répugnance des femmes, en ces régions, à se laisser examiner médicalement ? Ou plus simplement encore des statistiques médicales insuffisantes ?

Nous retrouvons quelques écarts semblables : l'un presque de même valeur (12 unités) dans le district de Sogn og Fjordane ; deux autres, moins considérables (7 unités), dans les districts de Akershus (district méridional) et de Nordland.

Parmi les provinces ou parmi les cités dont les écarts numériques sont en faveur des hommes (c'est-à-dire où les hommes ont plus de cancer que les femmes), il faut citer la ville de Bergen (7 unités), puis le district de Møre (4 unités).

Un arrangement selon la valeur croissante des taux de mortalité (tableau N° 2) permettra de voir plus clair dans la disposition géographique cancéreuse de la Norvège.

Tableau N° 2.

MORTALITÉ PAR CANCER DANS LES DIFFÉRENTS DÉPARTEMENTS DE LA NORVÈGE, POUR 10.000 HABITANTS, PENDANT LA PÉRIODE 1919-1921.

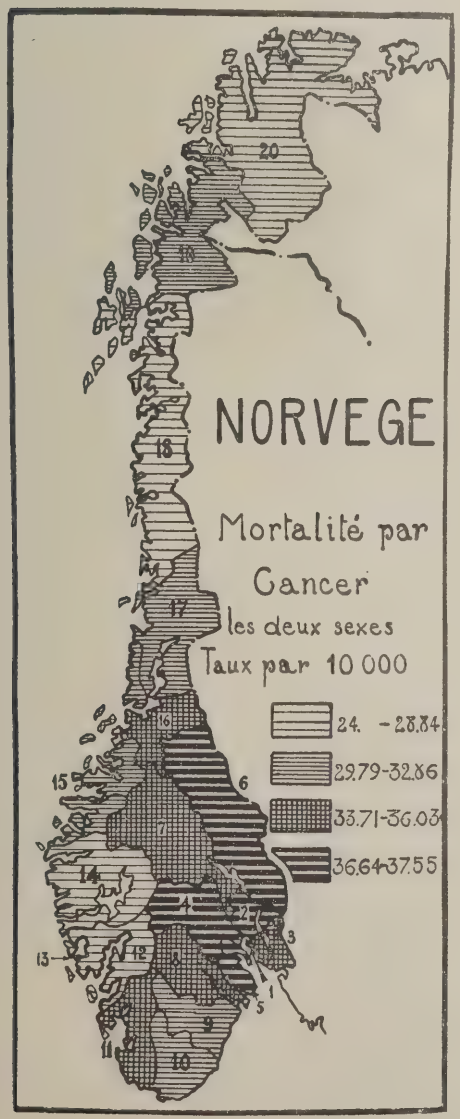
(Population dès 40 ans.)

Départements	Hommes Taux moyens annuels p. 10.000	Femmes Taux moyens annuels p. 10.000	Moyenne générale Taux moyens annuels p. 10.000
Nordland	27,63	20,73	24,02
Sogn og Fjordane	34,07	22,27	27,56
Hordaland	31,85	24,73	27,89
Finnmark	36,45	21,73	28,84
Vest-Agder	30,57	29,16	29,79
Troms	32,92	27,11	29,81
Møre	29,70	33,36	31,26
Aust-Agder	34,79	30,76	32,57
Nord-Trøndelag	34,37	31,78	32,86
Rogaland	32,32	34,71	33,71
Opland	36,45	32,19	34,06
Telemark, ou Bradsberg	35,54	31,84	34,12
Sør-Trøndelag	33,81	36,53	35,20
Østfold	37,44	34,91	36,03
Akershus	40,06	33,75	36,64
Hedmark	37,83	36,22	36,92
Kristiania	35,96	37,68	36,94
Vestfold	30,09	35,92	37,37
Buskerud	38,49	36,69	37,55
Bergen	36,51	43,60	40,55
Norvège	34,77	32,58	33,58

Cartogramme № 26.

NORVÈGE.

Répartition géographique de la mortalité par cancer. Taux calculés sur les décès parmi toute la population, mais par rapport à 10.000 habitants âgés de 40 ans et plus. Période 1919-1921.



LISTE DES DÉPARTEMENTS DE LA NORVÈGE

arrangés selon la numérotation employée dans les cartogrammes.

1.	Kristiania (Oslo)	= Kristiania (Oslo)
2.	Akershus	= Akershus
3.	Smaalenene	= Østfold
4.	Buskerud	= Buskerud
5.	Jarlsberg og Larvik	= Vestfold
6.	Hedemarken	= Hedmark
7.	Kristians	= Opland
8.	Bratsberg	= Telemark
8.	Nedenes	= Aust-Agder
10.	Lister og Manda	= Vest-Agder
11.	Stavanger	= Rogaland
12.	Søndre Bergenhus	= Hordaland
13.	Bergen	= Bergen
14.	Nordre Bergenhus	= Sogn og Fjordane
15.	Romsdal	= Møre
16.	Søndre Trondhjem	= Sør-Trøndelag
17.	Nordre Trondhjem	= Nord-Trøndelag
18.	Nordland	= Nordland
19	Tromsø	= Troms
20	Finmarken	= Finnmark.

Un examen rapide de la répartition géographique des taux minima et des taux maxima nous montrera sans doute des faits intéressants.

En suivant l'ordre du tableau N° 2 nous voyons la province de Nordland, puis celle de Nord-Bergen (Sogn og Fjordane), de Hordaland et de Finnmark, présenter les taux moyens les moins élevés. Ce sont des provinces maritimes situées au nord et au centre sud-ouest du pays. Leurs taux ne dépassent pas 28,84. A l'autre extrémité de la colonne, Buskerud (37,55), Vestfold (ou Jarlsberg og Larvick) (37,37) sont deux districts voisins. Le premier, terrien, le second, maritime. Hedemarken (36,92) est une province exclusivement terrienne.

En dressant la carte du pourcentage des taux cancéreux (carte N° 26), on s'aperçoit plus facilement qu'il existe deux groupements assez nettement délimités, l'un composé avec les provinces dont le taux de mortalité est compris entre 33,71 et 37,55, l'autre composé à l'aide des provinces à taux plus faibles. Le premier groupe est compact. Il est formé par les provinces du Sud-Trondhjem, Hedemarken, Opland, Akershus, Buskerud, Østfold, Bratsberg qui se touchent toutes. Il n'y a pas entre elles de solutions de continuité. Cette masse envoie un prolongement au sud-ouest: la province de Rogaland. Quant aux provinces à taux de mortalité les moins élevés, elles bordent la mer, du nord au sud, sauf Rogaland dont il vient d'être parlé et la partie maritime de celles d'entre elles qui regardent le fond du Skagerrak, ou mieux encore les approches et les bords du Kristiana fjord.

2. Les principaux caractères anthropologiques des Norvégiens.

Les Dolichocéphales néolithiques d'origine septentrionale — dont il a été parlé dans l'introduction du chapitre consacré à la Scandinavie — après avoir peuplé le Jutland et les îles danoises s'étaient avancés sur les territoires méridionaux de la Suède et de la Norvège. Ils n'en sont peut-être jamais sortis. Leurs descendants peuplent encore ces provinces que conquirent leurs ancêtres à l'âge de la pierre.

Au cours des siècles — peut-être même dès le début de l'occupation — quelques mélanges ethniques sont intervenus que nous allons voir. Chose curieuse, ils paraissent avoir été plus abondants et plus étendus en Norvège qu'en Suède. Ce sont les excellentes enquêtes d'Arbo [1] qui ont permis de dresser la carte — selon nos désirs encore incomplète, malheureusement — de la Norvège anthropologique.

Les Norvégiens sont, comme les Suédois, des hommes de haute taille. La moyenne générale de la stature doit, en Norvège, dépasser 1 m. 71. Et, comme en Suède, la seule diminution que nous observons dans l'espace concerne un territoire septentrional, le Finnmark, peuplé en partie par des Lapons, des Finnois et leurs métis. Ici la taille (1 m. 67 à 1 m. 68) est encore plus petite que dans le Lappland. En dehors de ce point, partout la taille des Norvégiens est élevée, particulièrement dans le nord et dans le sud-ouest. Elle est moins haute dans les préfectures du centre et du sud-est.

Quelques curieuses observations ont été faites au sujet de la stature des Norvégiens. On s'est demandé si les territoires côtiers, ou ceux qui sont exclusivement terriens, ou encore les intermédiaires, montraient des différences dans la taille des hommes qui les habitent.

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[1] Tous les travaux d'Arbo sont en langue scandinave. Quelques-uns contiennent des résumés en allemand ou en français. On pourra consulter, comme le plus intéressant au point de vue qui nous fait écrire cette notice, un mémoire, publié en 1900, dans la revue norvégienne *Ymer* (Stockholm) avec un résumé en français, sous ce titre: *Y a-t-il eu des immigrations successives dans la Péninsule scandinave ?*

Voici la réponse, tout approximative d'ailleurs.

Dans la zone méridionale, les marins et les habitants des littoraux sont un peu moins grands que les terriens de leur hinterland, sauf, cependant, dans les provinces de Trondhjem et de Romsdal; et ailleurs dans les environs mêmes des fjords.

Dans cette région péninsulaire, dont les abords ne sont guère accessibles qu'à des marins, peut-on déceler, à l'aide de la stature, des influences étrangères ?

Pour le savoir, il fallait répartir les résultats des diverses enquêtes anthropologiques selon de petites circonscriptions. A l'aide de plus de 100.000 recrues de vingt-deux ans, examinées avec beaucoup de soin dans l'espace norvégien, Arbo a tenté de le percevoir.

Il a constaté tout d'abord que deux îlots de très grandes tailles apparaissent : l'un dans le nord, à peu près à la hauteur du district Nord-Trondhjem; l'autre au sud, dans le territoire du Sud-Bergen. Nous constatons aussi la présence de quelques îlots de tailles relativement petites dans le centre du royaume. Des détails complémentaires seront indiqués plus loin.

* * *

Considérée dans son ensemble, la Norvège est aussi — comme la Suède — un pays dolichocéphale. Mais on ne peut représenter cette caractérisation par une teinte uniformément répandue sur toute l'étendue de la Norvège. Et la répartition de l'indice céphalique, tout à l'heure, nous montrera des localisations comme en a montré la stature. Elle nous indiquera en partie ce fait capital: que, parmi la population norvégienne, il existe des masses assez importantes d'individus brachycéphales, également de haute stature, qu'on a cru possible de rattacher à la race dinarique.

Ces brachycéphales de taille élevée paraissent avoir été des navigateurs intrépides. Tout à fait au large de la Norvège, au nord de l'Ecosse, sur la route de l'Islande, nous retrouvons de tels types dans les Färoër. C'est principalement dans l'île méridionale qu'on les rencontre. Signalés autrefois par Arbo, ces brachycéphales ont été reconnus avec plus de détails encore par Jorgensson. Il a montré qu'en cet endroit les brachycéphales et les mésocéphales comprennent presque la moitié des individus recensés. Annendale, portant ses investigations dans l'île moyenne, y a rencontré une forte population de types mésocéphales. Ces îles ont été découvertes au IX^e^ siècle par les Norvégiens. Il est certain que ceux qui les peuplèrent appartiennent au groupe humain sud-occidental du royaume. Peut-être sont-ce de tels navigateurs qui découvrirent l'Amérique ?

La taille en Norvège.

Il faut faire remarquer, tout d'abord, la nécessité — soulignée précédemment à propos d'un autre Etat — de n'utiliser, dans un tel chapitre, que des statistiques chronologiquement bien groupées. Les enquêtes les plus récentes en Norvège ont montré, comme partout en Europe, une augmentation de la taille; utiliser simultanément des statistiques datant de moments très différents conduirait à commettre des erreurs certaines.

Les enquêtes d'Arbo sur la stature des Norvégiens — qui sont à citer à côté des plus belles enquêtes de ce genre dans le monde — ont permis d'établir une carte de la répartition de la taille en Norvège avec des détails géographiques remarquables. Mais il est bien entendu qu'une telle carte, tout excellente qu'elle soit, ne peut encore être que provisoire.

J. Deniker a utilisé les chiffres d'Arbo, ceux fournis par les recrutements militaires, ceux de A. et H. Daae. Nous chercherons nos renseignements dans les résumés de ces travaux.

La stature des Norvégiens ressort, d'après Deniker, à 1 m. 710. C'est la taille moyenne donnée par les statistiques américaines de Baxter pour 2.290 Norvégiens habitant l'Amérique (1 m. 717), mais un tel chiffre global est, pour ce que nous recherchons ici, sans grand intérêt.

La plus petite taille en Norvège est, comme en Suède, celle des populations septentrionales. Nous retrouvons ici, comme là, l'influence laponne. Les hommes du département de Finnmark n'ont guère que 1 m. 67. Pour tout le reste du royaume, la taille s'échelonne de 1 m. 70 à 1 m. 724. Mais la stature moyenne ne peut être marquée sur la carte à l'aide d'une teinte uniforme. La répartition détaillée qu'a faite Arbo le montre nettement. La stature norvégienne est surtout élevée dans le nord (départements de Nordland et de Trondhjem) 1 m. 715 à 1 m. 724, et dans le sud-ouest du pays (départements de Stavanger (Rogaland), de Lister og Mandal (Vest-Agder), et de Nedenes (Aust-Agder), où elle peut dépasser légèrement 1 m. 72.

Quant aux tailles les moins élevées elles se présentent dans le sud du royaume, dans les départements de Bratsberg (Telemark) et Smaalenene (Østfold) où elle n'est guère que de 1 m. 70. Mais cette partie méridionale du pays nous montre aussi de grandes différences dans la stature des populations. Le département de Jarlsberg og Larvik (Vestfold) possède la plus haute taille de toutes les provinces (1 m. 724), tandis qu'à quelque distance au nord le département d'Akershus n'a qu'une taille relativement inférieure (1 m. 709). Il faut remarquer à ce sujet que ce département renferme la capitale du royaume, Oslo, et que, malgré cette présence, la stature du département n'est pas élevée. Cette moyenne relativement basse doit bien être l'expression réelle de la taille dans ce département.

De telles subdivisions départementales semblent, au premier moment, nous donner l'expression d'une réalité. Et cependant il n'en est rien. Un fait serait acquis qu'il serait inutile de chercher à discuter davantage. Certains départements ont été pénétrés de populations diverses. C'est ainsi que, selon les districts militaires, — circonscriptions moins étendues que les départements — la Norvège montre une autre répartition des statures. Deniker, qui a cherché à approfondir ces observations, a mis en lumière de grandes divergences entre ces deux arrangements. Alors à quoi se fier ? Nous ne pouvons établir entre les phénomènes que nous étudions que des rapports grossiers.

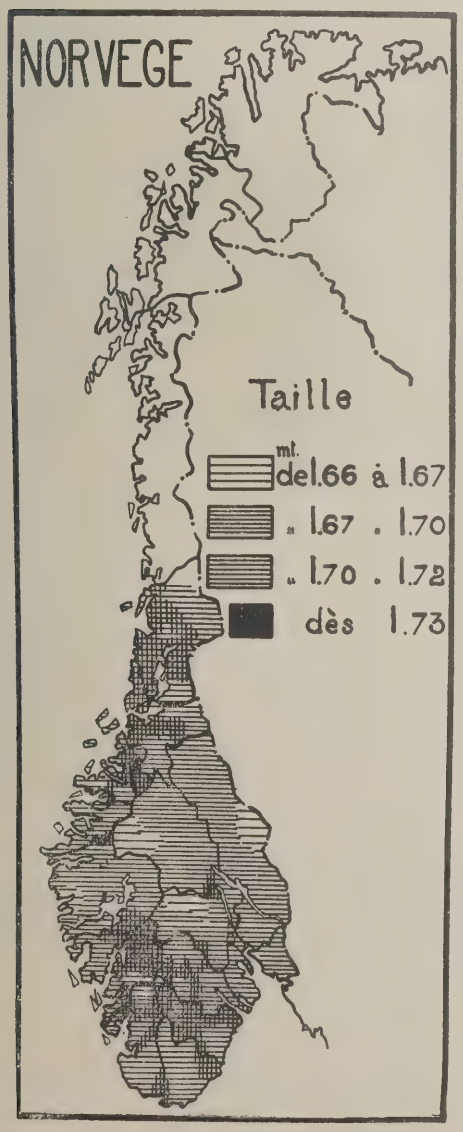
Je donne ici copie (carte N° 27) dans ses grandes lignes seulement, — la carte modèle est à une bien plus grande échelle — de la carte d'Arbo. L'auteur norvégien n'a pas tenu compte de la répartition des tailles dans les districts qui sont plus au nord que le département du Nord-Trondhjem. D'après cette carte, aucun département n'est réellement homogène. D'une façon générale, les tailles les moins élevées sont dans le centre du royaume. Les départements de Kristians (Opland), de Hedemarken, de Buskerud, de Akershus, de Jarlsberg og Larvik sont ceux qui appartiennent le plus nettement aux statures les moins élevées (de 1 m. 66 à 1 m. 70). Une première zone de haute taille s'étend d'abord sur les départements de Nord-Trondhjem, Sud-Trondhjem, Romsdal (Møre). Puis des traînées de ces populations à haute stature se répandent dans les départements du sud du royaume notamment dans le Søndre Bergenhus (Hordaland), dans le Nedenes (Aust-Agder), dans, le Bratsberg (Telemark). Dans cette traînée on remarque des îlots de tailles particulièrement grandes: ainsi le canton d'Ulvik au fond du Hardanger-fjord, dans le Sud-Bergen, d'où un chapelet de très grandes tailles se déroule jusqu'au bord de la mer, dans le voisinage de Kristianssand.

On pourra faire cette remarque, qu'en dehors de la grande masse des hautes statures du nord, qui domine la côte sur une large étendue, les Norvégiens les plus grands n'habitent pas les rivages maritimes; de temps en temps, ils poussent des pointes jusqu'à la mer, mais leurs contingents composent les populations dont la position géographique est intermédiaire entre les côtes et l'est, territoires voisins de la Suède.

Cartogramme N° 27.

NORVÈGE.

Répartition géographique de la taille.
(Carte d'Arbo.)



Cartogramme N° 28.

NORVÈGE.

Répartition géographique de l'indice céphalique.

Inutile d'entrer dans plus de détails. C'est la carte que nous venons de décrire qui sera utilisée lorsque nous rapprocherons des taux de mortalité par cancer les caractères de la stature.

L'indice céphalique en Norvège.

C'est encore à Arbo qu'il nous faut avoir recours. Ce savant a publié toute une série de notes sur les caractères de l'indice céphalique en Norvège.

Considérée dans son ensemble, la Norvège est un pays où les habitants ont le crâne allongé. Mais on ne peut représenter cette caractérisation par une teinte uniforme. Et l'indice céphalique nous montrera des localisations comme en a montré la stature. S'il fallait envisager d'un coup d'œil la Norvège entière, on dirait qu'elle est peuplée par des sous-dolichocéphales. Mais sur ce fond commun, il y a des teintes de dolichocéphalie plus ou moins accentuée et une région (la côte sud-ouest) riche de types sous-brachycéphales et mésocéphales (voir la carte N° 28).

Les teintes dolichocéphales font trois traînées. La plus centrale située « plus près de la Suède que de la côte ouest s'étend depuis Trondhjem au Nord jusqu'à Kragerø sur la côte sud-est. Elle comprend du nord au sud le district de Nord-Trondhjem, le haut Gu'dbrandsdalen avec le val de Lom, la haute vallée de Valders (dolichocéphalie peu prononcée); le district de Krodsherred avec les vallées de Sigdal et de Numdal assez élevées; enfin, les districts de Landerer et de Skien par lesquels les dolichocéphales arrivent en un seul et unique point de la côte norvégienne entre le Skienfjord et la ville de Kragerø. Quelques îlots dolichocéphales situés dans la province de Telemark unissent cette teinte dolichocéphale centrale à une autre située plus à l'ouest et composée par le pays avoisinant le Hardangerfjord (60° de latitude nord) au nord; le district de Bykle (haute vallée de l'Otter) au centre de l'îlot Exen Grinden entre les hautes vallées de Kwinn et du Mandal au sud. Quand au chapelet oriental, il est formé par la vallée moyenne et inférieure d'Oesterdalen par le district de Solor et par l'îlot de Tydalen au sud-est de Trondhjem plus au nord[1]. »

La région mésocéphale et sous-brachycéphale s'étend sur les côtes depuis Lillesland sur le Skagerrak (district de Nedenes) jusqu'au 63^{me} parallèle environ avec une interruption causée par les districts de Sud-Bergen en partie et de Romsdal. Sur ces territoires, les types à crânes arrondis sont loin d'être des exceptions. Ainsi dans le pays dont Stavanger est le chef-lieu, les indices de 82 et au-dessus figurent pour le 48 %. Mais c'est là un chiffre exceptionnel en Norvège. Les deux districts côtiers de Lister og Mandal et de Nedenes n'en ont plus respectivement que 24 % et 16 %; dans le district de Bratsberg cette quantité tombe à 12 %.

Je voudrais citer ici quelques lignes d'Arbo lui-même:

« En résumé, tandis que pour la Norvège orientale nous n'avions à distinguer qu'une population très dolichocéphale et une population plus mésocéphale, les choses sont tout autres dans les régions occidentales. Vers l'extrémité méridionale du pays, il faut distinguer la population des côtes, brachycéphale; la population de l'intérieur, mésocéphale prédominante et, dans quelques petites vallées, les restes dispersés de la population dolichocéphale. De Siriaa jusqu'à la frontière de Søndhordaland la population brachycéphale est absolument prédominante, à la seule exception de la vallée isolée de Suldal, dans le Ryfylke, dont la population est mésocéphale avec une tendance vers la dolichocéphalie, et est probablement venue de Hardanger.

« Dans la province de Bergen, il faut encore séparer une population littorale méridionale qui est, en général, mésocéphale, une population de l'intérieur des fjords, mésocéphale ou

[1] J. Deniker: *L'indice céphalique en Europe*, Paris, 1899.

très dolichocéphale, à taille élevée et blonde, et une population brachycéphale plus foncée (Sogn). Vers le nord, la brachycéphalie recommence quoique un peu modifiée, et s'étend depuis la côte jusqu'au fond des fjords, pour se restreindre encore plus au nord, à la côte en laissant à la mésocéphalie l'intérieur du pays jusqu'à Nordmøre où celle-ci est remplacée par la dolichocéphalie »[1].

Il semble que deux groupes ethniques principaux ont peuplé la Norvège. Le groupe dolichocéphale doit appartenir, comme une grande partie des Suédois, au type nordique, de taille haute, de face allongée, de couleur blonde.

A quel rameau humain rattacher l'autre groupe, celui qui, tout en ayant une haute stature, possède un crâne plus ou moins arrondi ? A plusieurs reprises, déjà, on a pensé qu'une partie au moins de cette population pouvait être considérée comme de race dinarique. Rien ne semble s'y opposer péremptoirement. On vient de voir que ces brachycéphales sont de pigmentation foncée. Toutefois, des enquêtes plus précises seraient encore nécessaires avant de conclure.

3. Les caractères anthropologiques et le taux de mortalité par cancer en Norvège.

La carte N° 26 a montré quelle était la répartition du cancer en Norvège. Les taux les plus élevés sont dans les départements du centre-est, les taux les moins élevés sur les côtes (exception pour le fond du golfe Skagerrak).

La taille et le cancer.

La carte de la stature nous permet de limiter les tailles les moins hautes à certains districts. Kristiania, Hedemarken, Buskerud, Akershus, Vestfold sont les départements qui présentent la plus grande homogénéité sous ce rapport. Or, ce sont là des districts où le cancer est fortement répandu. Nous les voyons figurer en tête de la liste lorsque celle-ci est arrangée selon l'ordre décroissant. Chacun de ces taux dépasse celui de la Norvège entière.

Districts de moins haute taille	*Taux de mortalité par cancer*	
Kristiania	36,94	moyenne 37,01.
Hedemarken	36,92	
Akershus	36,64	
Buskerud	37,55	

Les districts les plus riches en haute stature sont ceux de: Nord-Trondhjem (Sør Trøndelag), Nedenes (Aust-Agder), une partie du Sud-Bergen (Hordaland) et du sud Trondhjem (Sør Trøndelag), une partie de Romsdal (Møre).

Districts de plus haute taille	*Taux de mortalité par cancer*	
Nord-Trondhjem	32.86	moyenne 31,96.
Nedenes	32,57	
Hordaland.	27,89	
Sør-Trøndelag	35,20	
Møre	31,26	

[1] Arbo: *Sur l'indice céphalique en Norvège, sa répartition topographique et ses rapports avec la taille.* Compte rendu du XII[e] Congrès de médecine, Moscou, 1900.

Les départements à plus haute stature paraissent renfermer moins d'individus cancéreux que les départements dont les hommes sont plus petits. D'autre part, si je prends deux départements dont la population est fréquemment de haute stature, mais dont l'ensemble ne rentre pas dans cette catégorie (Nord-Bergen), (Sogn og Fjordane) et Lister og Mandal (Vest-Agder), je constate qu'ils ont aussi des taux de mortalité assez faibles; respectivement 27,56 et 29,79. Ce ne sont pas là des démonstrations extrêmement nettes. Tout de même, ces observations nous autorisent à présumer que les deux groupes extrêmes de stature, en Norvège, ne sont pas également touchés par le cancer.

Il faut remarquer ici que les plus grandes tailles de la Norvège ne paraissent pas associer à ce caractère la dolichocéphalie et la couleur blonde des cheveux. Arbo a souligné ce point important dans le chapitre dont nous avons cité un paragraphe et où il a noté, entre autres choses, la couleur habituellement foncée des hommes. La carte dressée par l'auteur norvégien, laquelle ne tient pas compte des frontières départementales, mais a logé les caractérisations ethniques dans les plus petites circonscriptions, permettrait de voir clair dans la question que nous discutons. Malheureusement, les notations du cancer n'ont pas été faites selon le même module géographique.

Peut-être de telles indications existent-elles dans les bureaux d'hygiène et de statistique de la Norvège ? Ce travail utile pourrait être alors entrepris.

L'indice céphalique et le cancer.

Les indices céphaliques les plus dolichocéphales sont ceux des provinces suivantes dont, à côté des noms, nous inscrivons les taux de mortalité:

Départements	*Taux de mortalité par cancer*	
Kristiania	36,94	
Buskerud	37,55	
Bratsberg	34,12	
Akershus	36,64	Moyenne 36,59.
Jarlsberg	37,37	
Hedemarken	36,92	

Les indices céphaliques les plus brachycéphales sont ceux des provinces suivantes: (nous mettons en regard les taux de mortalité):

Départements	*Taux de mortalité par cancer*	
Stavanger	33,71	
Lister og Mandal . . .	29,79	
Nordland	24,02	Moyenne 29,59.
Nord-Trøndelag . . .	32,86	
Nordre Bergenhus . .	27,56	

Il y a une différence sensible entre les deux moyennes ci-dessus. On en pourrait conclure que les populations brachycéphales de la côte sont moins touchées par le cancer (sauf peut-être le district de Stavanger) que les populations les plus dolichocéphales. Remarquons que le département de Stavanger dont le taux de mortalité est le plus élevé de tous ceux du dernier groupe (les plus brachycéphales) reste, sous ce rapport, en arrière de tous les départements qui figurent dans le premier groupe.

Il est évidemment très difficile, dans des provinces mixtes, dans des districts où les populations sont mélangées dans des proportions que nous ignorons, de savoir si ce sont les plus grands ou les plus petits, les plus brachycéphales ou les plus dolichocéphales qui sont les plus atteints par le cancer. Les documents dont nous disposons nous permettent

tout au plus de croire qu'il y a lieu de pénétrer plus profondément dans le phénomène que nous ne le pouvons aujourd'hui. Peut-être cette analyse plus précise révélerait-elle les rapports que nous supposons ? A cet égard, l'enquête faite en Norvège est plus intéressante que celle faite en Suède: la répartition géographique de deux groupes ethniques importants montre, dans ces deux groupes, une répartition inégale de taux cancéreux.

Conclusions.

Il y a, entre les divers départements de la Norvège, des écarts assez considérables dans les taux de mortalité par cancer.

Un premier coup d'œil fait voir que ce sont surtout les régions exclusivement terriennes qui sont les plus riches de tumeurs cancéreuses. *Grosso modo*, les provinces les moins touchées sont celles qui bordent la mer, depuis le Finnmark — dont il ne faut pas trop parler ici à cause de ses Lapons — jusqu'au bord même du Kristiania-fjord. Il existe donc, encore une fois, *grosso modo*, une répartition géographique du cancer en Norvège.

Pour des raisons de pauvreté documentaire nous éliminerons, des comparaisons qui seront faites dès à présent, les trois départements septentrionaux, Finnmark, Tromsø et Nordland.

Les caractères anthropologiques principaux de la Norvège sont les suivants: une stature générale élevée, habituellement plus haute sur les côtes que dans l'intérieur. Les statures les moins hautes se groupent principalement dans les districts de l'intérieur, dans la partie la plus élargie de la Norvège. Mais les côtes sont aussi habitées, en certains points, par des hommes dont la taille n'est pas très élevée.

Ces différences de tailles correspondent certainement à des caractérisations ethniques d'ordres divers. Ce ne sont pas des populations appartenant à la même souche originelle qui vivent en Norvège côte à côte, y parlant la même langue, groupées sous le même étendard politique.

Une seconde preuve de cette diversité ethnique nous est fournie par l'étude des formes craniennes.

Les Norvégiens sont considérés dans leur généralité comme des sous-dolichocéphales. Ce terme seul qui représente une valeur intermédiaire permet d'imaginer que la population à laquelle il est appliqué ne doit pas être d'une origine unique. Les habitants les plus dolichocéphales de la Norvège sont ceux de l'intérieur, les plus brachycéphales — exception faite naturellement pour la région septentrionale où vivent les Lapons —, sont les populations côtières. Si les côtes sont surtout peuplées par des hommes à crânes arrondis, elle ne le sont pas exclusivement. En plusieurs points les Dolichocéphales atteignent la mer.

Lorsqu'on examine comparativement les caractères de la stature et les taux de mortalité par cancer, on constate que les districts de plus haute stature ne sont pas ceux qui renferment le plus d'individus cancéreux. Le cancer est surtout répandu, avons-nous dit, parmi les populations terriennes, et elles sont de moins haute taille que les populations maritimes. Mais il faut faire cette remarque importante, soulignée par Arbo, le descripteur de la Norvège, que les populations de haute taille de ce royaume n'associent pas à ce caractère morphologique un crâne dolichocéphale et la couleur blonde des cheveux.

Or, l'examen comparatif des taux cancéreux et de l'indice céphalique montre que les taux sont moins élevés dans les territoires habités par les populations à indice céphalique les plus hautes, c'est-à-dire les plus tournées vers la brachycéphalie.

Le cancer paraît donc plus abondant chez les Norvégiens qui sont en même temps les hommes de moins haute taille et les plus souvent dolichocéphales (et aussi ceux dont les cheveux sont blonds).

Il est probable que les côtes norvégiennes sont peuplées par des représentants de la race dinarique. Nous avons, pour l'imaginer, non seulement ce que nous ont révélé les enquêtes anthropologiques en Norvège même, mais les constatations faites de l'autre côté de la mer du Nord vers les côtes de l'Ecosse et dans les Iles Färöer. A une époque impossible à préciser, pour le moment, ce groupe ethnique aurait, venant on ne sait d'où exactement (probablement par le Danemark actuel) peuplé les deux rivages de la mer du Nord. De nouvelles enquêtes sont évidemment nécessaires pour affirmer ce peuplement, mais, encore une fois, il apparaît très probable. Une confirmation de cet habitat des côtes norvégiennes par des représentants de la race dinarique serait, pour ce que nous discutons ici, d'un très haut intérêt.

En effet, on a pu constater, au cours des pages précédentes, que le groupe de plus haute stature, à crâne brachycéphale ou à tendance brachycéphalique, à pigmentation plus foncée, est celui qui est le moins touché par le cancer. La preuve en est donnée, à la fois par la moyenne générale des taux cancéreux dans les deux groupes ethniques, et par les moyennes des taux de chacun des départements ayant les indices les plus brachycéphales. Il est très difficile de percevoir avec exactitude les rapports que nous supposons, puisque nous avons, en chaque département, affaire à des populations dont aucune n'est pure ethniquement.

Ce sont seulement des majorités qui nous renseignent et non des unanimités.

IV. ÉTUDE PRÉLIMINAIRE COMPARATIVE SUR LA RÉPARTITION DES RACES ET DES TAUX DE LA MORTALITÉ PAR CANCER AU DANEMARK

Par le professeur Eugène PITTARD.

La conservation, dans leur intégrité, de l'un des principaux types humains primitifs n'a pas été aussi assurée dans le royaume du Danemark que dans la Scandinavie. C'est qu'ici les conditions géographiques ne sont plus les mêmes. Le Danemark est beaucoup plus rapproché du centre européen; par l'Allemagne septentrionale, le passage est ininterrompu entre le reste du continent et la presqu'île. *A priori*, nous aurons moins de chances, sur territoire danois, de rencontrer des groupements humains aussi homogènes qu'en Suède, et même vraisemblablement qu'en Norvège.

Déjà dès un très vieux néolithique, déjà dès l'azilien, les hommes habitaient le Danemark. Les tombes de ce pays renferment des restes abondants de l'industrie néolithique. La race humaine était sans doute, à la même époque, la même que celle des Suédois et des Norvégiens. A l'âge du bronze, le Danemark reçut des apports brachycéphales, probablement venus de l'Allemagne centrale.

Nous n'avons pas encore, pour le Danemark, des enquêtes anthropologiques aussi poussées que celles entreprises par Retzius et Fürst pour la Suède et par Arbo pour la Norvège, mais nous avons l'espoir de les posséder bientôt.

A l'heure actuelle, la population danoise est caractérisée par une stature relativement élevée, un crâne habituellement dolichocéphale, des yeux et des cheveux ordinairement clairs; elle appartient ainsi, dans son ensemble, à la race nordique.

1. La répartition du cancer au Danemark.

Il existe, au sujet des taux du cancer dans le Danemark, toute une série d'enquêtes dont on trouvera le reflet dans l'ouvrage d'Hoffman [1]. Les chiffres publiés sont impressionnants par leur valeur élevée. Ils dépassent ceux des autres pays scandinaves. Est-ce l'effet de statistiques meilleures dans le Danemark que dans les pays voisins ? Comment le savoir ? Est-ce un résultat réel appartenant en propre au Danemark ?

Le tableau N° 1 montre les taux de mortalité par cancer dans les années 1920-1922, calculés dans la population âgée d'au moins 40 ans et par 10.000 habitants.

[1] Ouvrage cité.

Tableau N° 1.

Mortalité par cancer au Danemark.

1920-1922.

Provinces	Décès par cancer, période 1920-1922, chez la population âgée de 40 ans et plus		Population âgée de 40 ans et plus 1-II-1921	Taux moyens annuels p. 10.000
	Total	Moyenne		
Københavns Amt	3.787	1.262,3	257.257	49,06
Frederiksborg	483	161	33.699	47,78
Holbaek	514	171,3	36.316	47,18
Sorø	483	161	33.554	47,98
Praestø.	513	171	36.082	47,39
Bornholm	194	64,6	14.122	45,74
Maribo (Laaland & Falster)	497	165,6	36.209	45,72
Svendborg	529	176,3	46.296	38,09
Odense	761	253,6	56.204	45,13
Vejle.	614	204,6	45.555	44,93
Aarhus	1.075	358,3	68.365	52,41
Randers	631	210,3	40.349	52,13
Aalborg	587	195,6	43.864	44,61
Hjørring	541	180,6	37.505	48,17
Thisted.	312	104	23.239	44,75
Viborg	491	163,6	35.467	46,15
Ringkjøbing	473	157,6	57.607	41,92
Ribe	354	118	34.677	34,03
Nord Slesvig (sur 1921-22), soit:	328	164	48.905	33,53
Haderslev id.	113	56,5	16.367	34,52
Aabenraa id.	70	35	10.378	33,73
Sønderborg id.	70	35	11.892	29,43
Tønder id.	75	37,5	10.268	36,52

Ce tableau, mais peut-être mieux encore le cartogramme N° 29, nous permet de constater que le taux de mortalité par cancer dans le Danemark n'est pas égal partout. Si, pour l'ensemble du pays, le taux moyen est compris entre 40 et 50 pour 10.000 habitants, on remarque, en diverses parties du royaume, des taux n'atteignant pas et d'autres dépassant ce taux moyen. C'est ainsi que le minimum s'observe dans les anciennes provinces du Slesvig recouvré, où la province de Sønderborg ne fournit qu'un taux de 29,43 et que, un peu au nord, en restant toujours dans la partie continentale, les provinces d'Aarhus et de Randers apportent à la statistique générale du royaume les deux maxima de celle-ci: 52,41 et 52,13. Ces variations sont très visibles sur la carte N° 29.

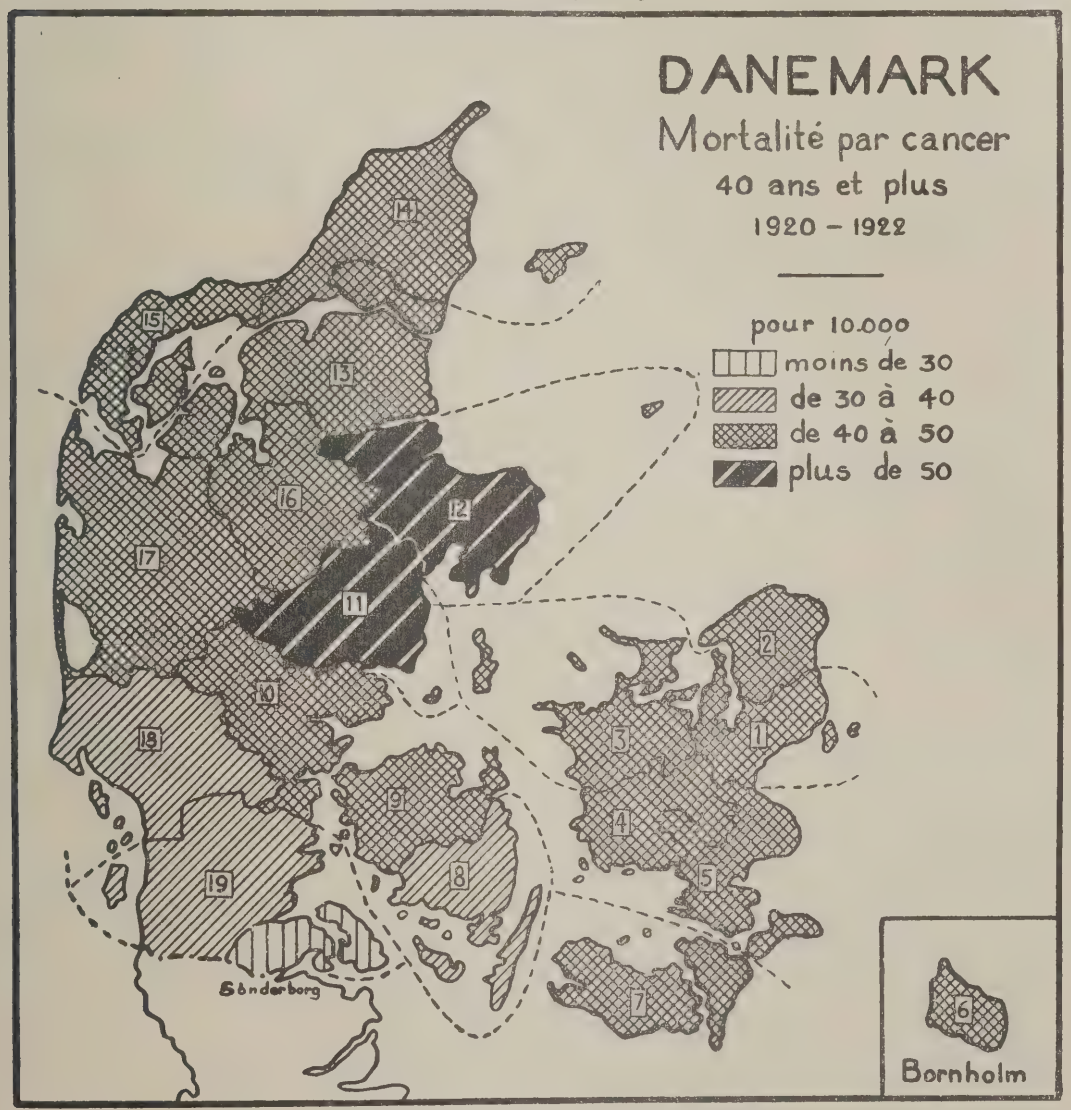
Il est évident qu'il n'y a pas à faire intervenir, pour expliquer ces variations, des raisons topographiques. Le Danemark est trop petit et trop uniforme dans sa composition géographique pour qu'on puisse envisager de pareilles éventualités. La partie insulaire (y compris Bornholm) présente une unité relative quant aux taux de mortalité relevés sur son territoire.

Quelle peut être la raison du minimum observé dans les territoires récupérés lors de la grande guerre ? Les provinces anciennement allemandes du Slesvig bénéficient-elles d'une apparence de moindre mortalité due à des statistiques moins bien ordonnées, par

Cartogramme N° 29.

DANEMARK.

Répartition géographique de la mortalité par cancer parmi la population âgée de 40 ans et plus, période 1920-1922.



LISTE DES PROVINCES DU DANEMARK

arrangées selon la numérotation employée dans les cartogrammes.

1. Copenhague
2. Frederiksborg
3. Holbaek
4. Sorø
5. Praestø
6. Bornholm
7. Maribo (Laaland & Falster)
8. Svendborg
9. Odense
10. Vejle
11. Aarhus
12. Randers
13. Alborg
14. Hjørring
15. Thisted
16. Viborg
17. Ringkjøbing
18. Ribe
19. Nord-Slesvig

suite des changements politiques, que celles du reste du Royaume danois ? Cela paraît peu probable, d'autant plus que les chiffres utilisés proviennent de statistiques récentes, évidemment établies dans les nouvelles provinces sur le même modèle que dans les anciennes. On pourra remarquer à ce sujet que le seul taux de mortalité relativement inférieur du Royaume danois (sans le Slesvig) est celui de la province de Ribe qui touche le Slesvig même. Ce pédicule du Jutland forme-t-il une région dont les hommes sont plus favorisés que dans tout le reste du Danemark ? Cette résistance est-elle due à une différence de race ?

Je voudrais faire encore remarquer que les provinces où se trouve le taux maximum ne sont pas celles où de très grandes villes pourraient influencer la statistique en l'aggravant artificiellement. La province de Copenhague, avec la ville populeuse de ce nom, ne vient qu'en troisième rang après les provinces d'Aarhus et de Randers.

2. Les caractéristiques anthropologiques du Danemark.

Jusqu'au moment où parurent les résultats des enquêtes entreprises par le Comité anthropologique danois, les documents sur les caractères ethniques du Danemark étaient rares. On s'en tenait encore, lorsqu'on voulait connaître la physionomie anthropologique de ce pays, aux chiffres de la statistique fournie par les recrutements militaires — plus anciennement encore à ceux de Baxter — et par ceux obtenus par l'étude de la petite série de marins danois, mesurés jadis par Beddoe. Et c'est ainsi que dans ses mémoires sur l'indice céphalique et la taille et, plus tard, sur la pigmentation, J. Deniker n'apporte que bien peu de renseignements sur un pays qui, à cause de son intense développement intellectuel, semblait devoir être un des mieux informés [1].

Les enquêtes du Comité anthropologique danois ont porté à la fois sur un assez grand nombre d'adultes et sur un très grand nombre d'enfants. Nous allons les utiliser dans un instant [2].

La stature.

Les recherches dont les résultats ont été recueillis par Deniker, puis les documents apportés postérieurement par Søren Hansen et Mackeprang, ont montré que la taille moyenne des Danois est relativement élevée (1 m. 695). Elle l'est moins que celle des Suédois ou des Norvégiens, leurs parents linguistiques et historiques et aussi vraisemblablement — au moins dans une large mesure — ethniques.

Lorsqu'on examine la répartition de la taille (carte N° 30) selon les provinces, on s'aperçoit que cette taille moyenne est obtenue avec des chiffres globaux qui présentent entre eux très peu de différences. Je n'ai pu, jusqu'à présent, fixer exactement la taille de chaque province, mais il apparaît certain que la partie continentale possède une stature en moyenne plus élevée que la partie insulaire, notamment le groupe le plus oriental, où nous voyons la région de Copenhague, grâce, en grande partie, à la présence de la capitale, élever la taille moyenne de cette région.

C'est dans ces îles de l'Est que se rencontre la plus petite stature moyenne du Danemark: la province de Holbaek dont les hommes n'ont que 1 m. 675, tandis que dans la province voisine de Copenhague, ils ont une taille moyenne de 1 m. 692. La ville de Copenhague elle-même dépasse notablement la moyenne générale avec une stature de 1 m. 699.

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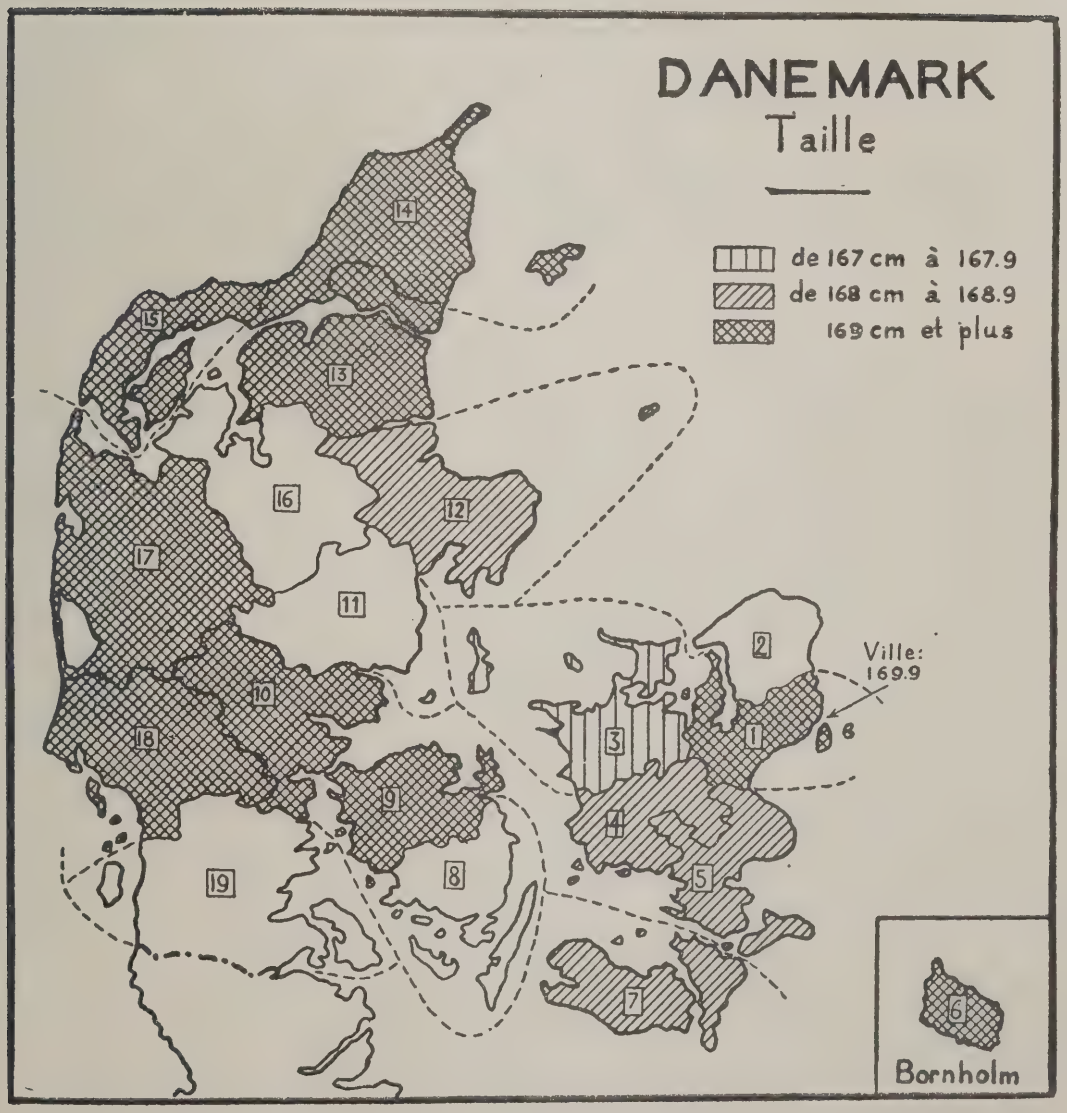
[1] J. Deniker: *La Taille en Europe*, Paris 1908, page 72. — Id. *l'Indice céphalique en Europe*, Paris 1899, page 49.— Id. *Les six races composant la population actuelle de l'Europe*, « The Journal of the Anthropological Institute of Great Britain and Ireland », volume XXXIV, 1904.

[2] Voir plus loin.

Cartogramme № 30.

DANEMARK.

Répartition géographique de la stature humaine
(d'après Søren Hansen, Mackeprang, Deniker).



La stature moyenne la plus petite de tout le Danemark est celle de la province de Holbaek citée plus haut, puis viennent, en ordre décroissant, dans les îles de l'est : les provinces de Laaland (1 m. 68) et celles de Sorø et Praestø (1 m. 688). C'est ensuite la province continentale de Randers (1 m. 689). Toutes les autres provinces insulaires et jutlandaises dont j'ai pu obtenir la taille moyenne atteignent et dépassent 1 m. 69. Plusieurs d'entre elles atteignent 1 m. 694 Il suffit d'examiner les chiffres individuels publiés jadis par Beddoe, pour s'apercevoir que la taille moyenne, relativement élevée, du Danemark, est fréquemment dépassée par les mesures individuelles. Rien que cette indication pourrait nous inciter à croire que des populations étrangères au « type scandinave » ont dû s'infiltrer dans le Danemark. Elles ont modifié la taille moyenne en la diminuant.

Chose fort intéressante, l'île de Bornholm qui, topographiquement, se trouve dans les eaux suédoises et dont le peuplement a été peut-être plus spécifiquement suédois, a la stature la plus élevée (exception pour la ville de Copenhague) de tout le Danemark (1 m. 698).

Le Jutland nous montre un phénomène que les enquêtes nous ont permis de constater identique dans le Schleswig-Holstein : à savoir que les habitants des côtes occidentales sont un peu plus grands que ceux de la côte orientale (du moins, si nous en jugeons par ce que montre la province de Randers [1]. Il ne peut s'agir là d'une influence mésologique. Je pense que pour expliquer une telle différence, il faut invoquer des faits historiques.

L'indice céphalique.

Les documents relatifs aux formes craniennes ont été pendant longtemps quasiment inexistants. On ne pouvait guère citer que les mesures d'une série de crânes de Danois par le professeur Schmidt, de Copenhague, 27 crânes provenant du Jutland avaient fourni l'indice céphalique moyen 74,4 (76,4 sur le vivant) et 56 crânes provenant des îles avaient donné l'indice céphalique 75,1 (77,1 sur le vivant).

Ainsi, le Jutland, alors qu'il apparaît peuplé par des hommes un peu plus grands que dans la zone insulaire, ajoute à ces hommes un caractère de plus grande dolichocéphalie que celle des individus habitant les îles.

Cette série cranienne fut publiée par Ranke, et Deniker en a donné une courte analyse dans son mémoire sur l'indice céphalique [2].

A côté d'elle, on ne pouvait citer que l'étude, par Beddoe [3], de 28 matelots danois dont 5 provenant du Slesvig et 23 du Jutland et des îles. L'indice céphalique moyen (80,5) de cette série est beaucoup plus élevé que celui de la série Schmidt-Ranke. Les hommes du Slesvig avaient des indices relativement forts (de 79,5 à 82,6). Sur les 18 individus du Jutland et des îles danoises (ce sont les îles orientales) il y en a 5 dont les indices céphaliques sont inférieurs à 78 et 5 dont l'indice dépasse 83. Cette série est très hétérogène. Elle le devient plus encore lorsqu'on remarque à côté des caractères du crâne, ceux de la taille et de la couleur des yeux et des cheveux, notés par Beddoe.

Ainsi, les statures s'échelonnent de 1 m. 574 à 1 m. 752. Et si nous constatons que les yeux de ces matelots étaient généralement clairs (bleus ou gris), nous voyons qu'en même temps ils avaient des cheveux qui allaient du blond clair au brun.

L'enquête du Comité anthropologique [4] a porté, pour ce qui touche à l'indice cépha-

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[1] Deniker mentionne aussi ce fait.

[2] J. Deniker : *L'indice céphalique en Europe*, déjà cité, pages 49-50.

[3] Beddoe : *On the head-form of the Danes*, London 1870.

[4] Søren Hansen : *Om Hovedets Breddeindeks hos Danske*, tiré à part de « Meddelelser om Danmarks Anthropologi udgivet af den Anthropologiske Komité », Copenhague, 1908.

lique, sur 4.000 individus, hommes et femmes de tous les districts, âgés de 20 à 65 ans, la plus grande partie provenant du Jutland et de la Fionie du Nord. L'indice céphalique moyen des hommes est 80,7, celui des femmes 81,5. Søren Hansen, l'auteur du mémoire que nous citons, a montré qu'il existe au Danemark de grandes variations individuelles. Dans la sériation qu'il a dressée les indices s'échelonnent de 69 à 97. Si je laisse de côté les extrêmes figurant dans son tableau (indices 69-70, un homme, et indice 95-97, quatre hommes), je constate que les Danois sont surtout, selon sa classification, des sous-brachycéphales.

J'ai calculé les pourcentages des diverses formes craniennes et j'ai établi le petit tableau que voici :

(N'oublions pas en consultant les chiffres des indices que les études ont été faites sur le vivant.)

Tableau N° 2.

Indices	Hommes	Femmes	Pour cent
70 à 75	65	29	2,34
75 à 80	806	622	35,62
80 à 85	958	1.065	50,47
85 à 90	163	207	9,98
90 à 95	6	17	0,57

On voit que ce sont les indices céphaliques de 80 à 85 qui sont le plus souvent représentés, puis ceux de 75 à 80. D'après la terminologie de Søren Hansen, les indices de 70 à 75 composent le groupe des sous-dolichocéphales [1] et ceux de 85 à 90 celui des brachycéphales. Ce sont donc la mésocéphalie et la sous-brachycéphalie qui — selon les termes qu'il a admis — sont, le plus fréquemment, les caractéristiques céphaliques du Danemark. Cette répartition serait tout autre si nous utilisions la terminologie des auteurs français, de Deniker, par exemple, dont la qualité de sous-dolichocéphalie s'arrête à l'indice 79.

Malheureusement, le mémoire de Søren Hansen ne mentionne pas la répartition géographique de l'indice céphalique [2].

La couleur des yeux et des cheveux.

Ces caractères nous sont connus grâce à la grande enquête entreprise par le Comité anthropologique [3]. Elle a eu pour objectif les enfants des écoles danoises, de 6 à 14 ans, filles et garçons. Elle a porté sur 300.000 sujets.

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[1] Dans la terminologie de Deniker un tel groupe figurerait parmi les hyperdolichocéphales. D'après le petit tableau ci-dessus, nous aurions, selon notre terminologie, environ 37,9 % de types dolichocéphales et sous-dolichocéphales. On peut constater que la quantité des indices céphaliques élevés est très grande au Danemark.

[2] J'apprends par une lettre personnelle de M. Søren Hansen que cette répartition géographique ne saurait beaucoup tarder.

[3] Søren Hansen : *Om Haarets og Ojnones Farve i Danmark*, tiré à part de « Meddelelser fra den Antropologiske Komité », Copenhague, 1906.

Tout de suite, il faut faire la réserve qui s'impose lorsqu'on utilise des documents de pigmentation recueillis sur des individus qui n'ont pas encore l'âge adulte. On sait combien la couleur se modifie avec l'âge. [1] Il faut aussi rappeler que de telles enquêtes ne peuvent être entreprises qu'avec la collaboration du corps enseignant et qu'ainsi des erreurs plus ou moins grandes dans les interprétations des couleurs peuvent être commises.

Les enfants observés étaient tous nés dans les districts mêmes où la statistique était entreprise.

La méthode employée a été celle de Beddoe, modifiée par Topinard et dont il a été question dans un autre chapitre.

Chaque groupe d'âge est représenté par des contingents de 20.000 à 30.000 sujets; exception cependant pour les sixième et quatorzième années qui en ont un peu moins.

Les conclusions générales qui ressortent de cette vaste enquête sont les suivantes (cartes Nos 31 et 32): les yeux et les cheveux clairs sont prédominants au Danemark. Le pourcentage des cheveux et des yeux foncés s'accroît avec l'âge des enfants. C'est ainsi que le nombre des garçons à faible pigmentation (cheveux et yeux clairs) décroît de 521 pour mille, lorsqu'ils ont six ans, à 330 pour mille, lorsqu'ils ont quatorze ans. Cette observation s'applique aussi aux filles.

Le nombre des individus ayant les cheveux rouges a été très petit.

En combinant les deux caractères des yeux et des cheveux, les enquêteurs ont trouvé que le tiers de tous les enfants avaient les cheveux et les yeux clairs; le sixième les cheveux et les yeux moyens, le cinquième des jeunes Danois ont les cheveux moyennement pigmentés et les yeux clairs. Les enquêtes ont encore constaté que les enfants à cheveux foncés avaient tout aussi fréquemment les yeux de couleur « moyenne » ou claire que des yeux foncés, tandis que les enfants à cheveux clairs n'avaient qu'exceptionnellement des yeux foncés et rarement des yeux de teinte moyenne.

Et puisque nous ne connaissons pas la répartition géographique de l'indice céphalique (pour le comparer à la répartition géographique de la stature), nous notons ici une indication qui est pour nous d'un réel intérêt. Lorsqu'on examine les différences locales des caractères ci-dessus de pigmentation, on s'aperçoit que l'ordre des districts arrangés selon la valeur de leur puissance pigmentaire correspond avec l'ordre donné par la stature, tel que l'a indiqué Mackeprang. Il existe donc une correspondance entre la taille et la pigmentation [2]. Les districts qui ont la plus haute stature sont ceux dont la population est la plus claire. Les districts qui ont la moins haute stature sont ceux où la population a le plus fréquemment les cheveux foncés. Il semble, par exemple, que la population du Jutland méridional soit plus claire et que les populations du sud et de l'ouest du Seeland (les îles orientales) soient plus foncées que les populations habitant le reste du royaume. Mais ce n'est là, ajoute le rapport, qu'une physionomie globale.

On peut regretter, du point de vue qui nous occupe ici, que le mémoire si important de Søren Hansen ne soit pas plus explicite pour ce qui concerne la répartition géographique des caractères de pigmentation au Danemark.

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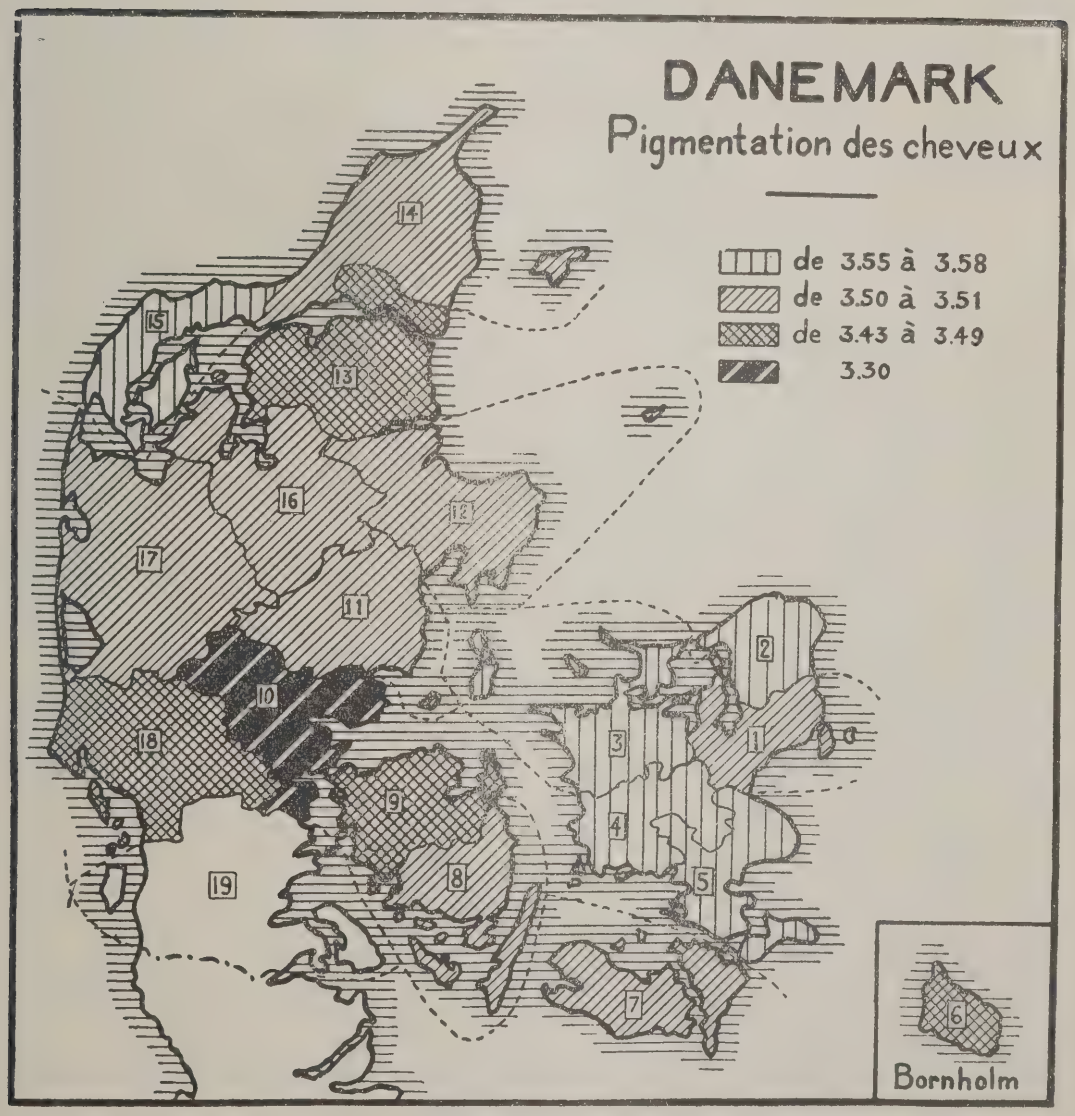
[1] Fritz Sarasin vient d'en donner une preuve nouvelle et péremptoire dans une étude sur la chevelure des Mélanésiens et des Nègres. Plusieurs des faits révélés par cet auteur au sujet de ces populations, qu'on peut croire très différentes biologiquement des Européens, s'appliquent à nos populations. F. Sarasin, *Sur le changement de la chevelure chez les enfants des Mélanésiens et des Nègres africains.* L'Anthropologie, T. 35, 1925.

[2] Il faut tout de même faire cette réserve que le degré de pigmentation s'accroît avec l'âge. Nous ne connaissons donc pas *réellement* la couleur des cheveux et des yeux en fonction de la stature puisque la connaissance de celle-ci nous a été donnée par des individus plus âgés que les écoliers sur qui la pigmentation a été étudiée.

Cartogramme N° 31.

DANEMARK.

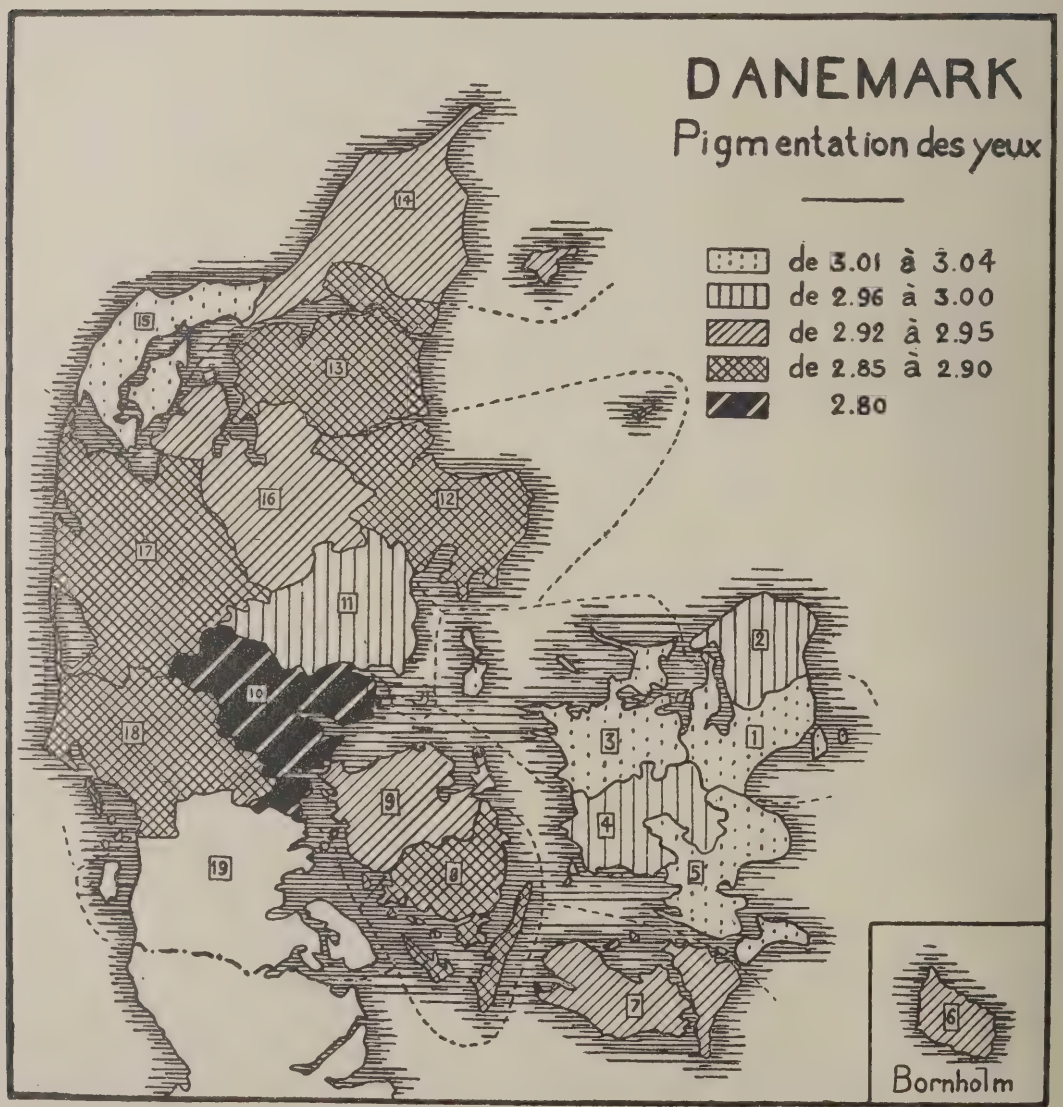
Répartition géographique du degré de pigmentation des cheveux
(d'après Søren Hansen).



Cartogramme N° 32.

DANEMARK.

Répartition géographique du degré de pigmentation des yeux.



J'ai essayé, à l'aide d'un tableau qu'il a dressé, de mettre en ordre de valeurs croissantes: d'un côté le degré de pigmentation des cheveux (tableau N° 3), de l'autre celui des yeux (tableau N° 4).

L'échelle de pigmentation adoptée pour la classification a été la suivante: 1 clair, 2 moyen, 3 foncé, 4 noir.

Tableau N° 3. — DEGRÉ DE PIGMENTATION DES CHEVEUX ET DES YEUX (LES SEXES RÉUNIS) SELON L'ORDRE CROISSANT DE LA PIGMENTATION DES CHEVEUX.

Provinces	Cheveux	Yeux
Vejle	3,30	2,80
Ribe	3,43	2,89
Aalborg	3,45	2,89
Odense	3,49	2,95
Bornholm	3,49	2,93
Københavns Amt	3,50	3,04
Aarhus	3,50	2,96
Randers	3,50	2,88
Ringkjøbing	3,50	2,85
Maribo	3,51	2,95
Svendborg	3,51	2,90
Hjørring	3,51	2,92
Viborg	3,51	2,92
Frederiksborg	3,55	3,00
Sorø	3,56	2,96
Praestø	3,57	3,04
Thisted	3,57	3,01
Holbaek	3,58	3,04
Moyennes	*3,49*	*2,93*

Tableau N° 4. — DEGRÉ DE PIGMENTATION DES CHEVEUX ET DES YEUX (LES SEXES RÉUNIS) SELON L'ORDRE CROISSANT DE LA PIGMENTATION DES YEUX.

Provinces	Yeux	Cheveux
Vejle	2,80	3,30
Ringkjøbing	2,85	3,50
Randers	2,88	3,50
Ribe	2,89	3,43
Aalborg	2,89	3,45
Svendborg	2,90	3,51
Hjørring	2,92	3,51
Viborg	2,92	3,51
Bornholm	2,93	3,49
Odense	2,95	3,49
Maribo	2,95	3,51
Sorø	2,96	3,56
Aarhus	2,96	3,50
Frederiksborg	3,00	3,55
Thisted	3,01	3,57
Praestø	3,04	3,57
Københavns Amt	3,04	3,50
Holbaek	3,04	3,58
Moyennes	*2,93*	*3,49*

D'une façon générale, les filles sont plus souvent foncées que les garçons. Cette différence a été attribuée au fait que leur développement est plus précoce que celui de leurs congénères masculins.

Le premier de ces tableaux, dressé selon la valeur croissante de la pigmentation des cheveux, montre que la couleur moyenne de ces derniers n'est pas très différente quand on passe d'une province à l'autre. On remarquera que les deux colonnes suivent un ordre assez régulier. D'une façon générale, le groupe des îles orientales, sauf Copenhague, est marqué par une pigmentation plus accusée. Cet arrangement ne se maintiendra pas le même dans le tableau N° 4 où nous verrons la province de Copenhague, en particulier, présenter, pour la pigmentation de l'iris, un degré d'intensité beaucoup plus fort qu'elle ne l'avait montré pour la couleur des cheveux.

J'ai cherché s'il pouvait exister quelques rapports entre le degré de pigmentation et le taux de mortalité par cancer. J'ai pris pour chacun des tableaux N^{os} 3 et 4, les six premiers et les six derniers termes et j'ai mis en regard des provinces ainsi choisies les taux de mortalité. J'obtiens les résultats suivants:

	Degré de pigmentation des cheveux	*Taux de mortalité par cancer*
Les six provinces à pigmentation minimum	3,44	43,87
» » » maximum	3,56	46,87

	Degré de pigmentation des yeux	*Taux de mortalité par cancer*
Les six provinces à pigmentation minimum	2,87	42,62
» » » maximum	3,01	48,05

Il semblerait résulter de cet essai que le cancer est plus souvent représenté chez les groupes humains dont le degré de pigmentation est plus accusé. Mais ce ne sont là, à cause de l'hétérogénéité même des séries provinciales, que des présomptions.

On pourrait d'autant moins se fier à de tels résultats, que cette enquête sur la couleur des yeux et des cheveux a été faite sur des écoliers dont les degrés de pigmentation — rappelons le — changent avec l'âge.

Conclusions.

Les conditions dans lesquelles nous sont présentés les documents anthropologiques ne nous permettent pas d'établir des relations intéressantes entre les caractères ethnologiques des Danois et les taux de mortalité par cancer dans ce pays. Nous travaillons avec des masses, alors qu'il faudrait avoir affaire à de petites unités.

Les variations que montrent les taux de mortalité, selon les lieux, au Danemark, le fait que les provinces à grandes villes (Copenhague) n'ont pas les taux les plus élevés, nous incitent à croire que des recherches de la nature de celles que nous avons entreprises ne seraient pas inutiles.

Il apparaît — malgré certaines apparences du contraire — que toutes les parties du Royaume danois ne sont pas habitées par des populations appartenant sans exception à la même race. A travers les résultats des enquêtes globales, nous pressentons l'existence de faits exceptionnels parfois abondants. Pourquoi les habitants des côtes occidentales sont-ils plus grands que ceux de la côte orientale ? Pourquoi la province d'Holbaek montre-t-elle une stature relativement petite ?

Si, pour expliquer ces différences, ne pouvant faire appel aux influences mésologiques, nous invoquons des faits historiques, nous voyons aussitôt surgir l'apparition d'un groupe étranger.

La répartition des formes céphaliques, à son tour, montre que la population du Danemark n'est pas d'essence homogène. Elle est composée en majorité par des individus dont les indices céphaliques sont compris entre les valeurs 80 et 85. La sous-dolichocéphalie est fortement représentée au Danemark. Les habitants du Danemark (enquête faite sur les enfants) sont généralement faiblement pigmentés. Chez eux, les yeux et les cheveux clairs sont prédominants. On a fait cette remarque, importante pour nous: les hommes à haute stature sont en même temps ceux qui sont les moins pigmentés. Ceux-là représenteraient donc plus nettement que les autres les caractéristiques de la race nordique.

En utilisant cette constatation, nous pouvons essayer quelques comparaisons provinciales entre la fréquence du cancer et la race.

Les taux minima de décès par cancer se constatent dans les provinces jutlandaises méridionales: Ribe, Nord-Slesvig. Le reste du royaume est fortement atteint par la maladie, notamment les provinces de Randers, d'Aarhus. Ribe a une taille élevée et une pigmentation relativement faible des yeux et des cheveux. Par contre, les provinces de Randers et d'Aarhus, les plus fortement touchées par le cancer, semblent posséder (au moins Randers) des populations dont la stature est un peu moins haute que celle des provinces environnantes. Quant à leur degré de pigmentation des cheveux, on constate que ces deux provinces se placent parmi les types moyens. On ne peut donc pas dire que ce sont les plus bruns qui soient le plus touchés par le cancer, mais on ne peut pas dire non plus que ce soient les autres types.

A voir les seules statistiques de la pigmentation, il semblerait que les provinces dont le degré de pigmentation des yeux et des cheveux est le moins accentué présentent un peu moins de population cancéreuse que les autres. Mais nous ne pouvons pas non plus, sur cette seule indication anthropologique, émettre un avis définitif.

Les résultats des enquêtes anthropologiques dans le Danemark, tels qu'ils nous sont présentés, ne nous permettent pas de saisir s'il existe un rapport — celui que nous supposons — entre la race et le cancer à l'intérieur même du royaume. Trop d'inconnues restent en suspens pour que nous osions présenter d'autres conclusions.

Une région danoise nous paraît particulièrement intéressante à étudier: celle qui comprend le pédicule même du Jutland, spécialement les provinces du Nord-Slesvig et de Ribe où nous avons constaté le minimum de taux cancéreux. Pourquoi dans cette région, encore une fois, les hommes sont-ils plus favorisés qu'ailleurs ?

V. ÉTUDE PRÉLIMINAIRE COMPARATIVE SUR LA RÉPARTITION DES RACES ET DES TAUX DE MORTALITÉ PAR CANCER DANS LES ILES BRITANNIQUES.

Par le professeur Eugène PITTARD.

Quels sont les types humains habitant aujourd'hui les Iles Britanniques ?

Les Iles Britanniques représentent, par une partie de leur territoire méridional, entre le sud de la Tamise et l'embouchure de la Severn, une des terres européennes les plus anciennement habitées. Les ossements de Piltdown, découverts dans les alluvions des bords de l'Ouse, sont parmi les plus antiques débris de l'humanité [1].

Le « splendide isolement » des Iles Britanniques n'a pas toujours existé. Au quaternaire ancien une terre faisait communiquer le sud de l'Angleterre avec le nord de la France et les Paléolithiques ont passé cet isthme. Dès que le sol de l'Angleterre — dès la rive droite de la Tamise — fut libéré des glaces apportées par les glaciers écossais, les hommes s'avancèrent sur les terres qui leur étaient offertes. L'Angleterre se peupla graduellement du sud au nord. Elle connut des habitants appartenant aux mêmes types ethniques que ceux qui chassaient sur le reste de l'Europe.

Au moment où la civilisation de la pierre polie apparaît, la population de l'Angleterre, qui est de type dolichocéphale, comme l'ont été tous les Paléolithiques, ne verra pas, comme de l'autre côté du détroit, la France, des apports de brachycéphales. La masse dolichocéphale des Iles Britanniques qui, on s'en rendra compte tout à l'heure, est l'image générale du pays, peut revendiquer d'antiques ancêtres.

Dans les long-barrows les squelettes ont des crânes dolichocéphales et des faces leptoprosopes. Ils appartiennent au groupe des « Dolichocéphales néolithiques d'origine septentrionale » dont il a été parlé à propos de la France et de la péninsule scandinave.

Lorsque l'âge du bronze est apporté en Angleterre, arrivent les Brachycéphales. Leurs squelettes se retrouvent dans les round barrows. Thurnam a montré la superposition chronologique de ces deux types ethniques, et Beddoe, *grosso modo*, a confirmé ses vues. Depuis ces époques lointaines d'autres arrivées de dolichocéphales eurent lieu dans les Iles Britanniques, au moment des invasions historiques, par exemple. Théoriquement, il serait possible de retrouver parmi les populations actuelles les descendants de ces groupes divers.

Malheureusement, l'état anthropologique actuel des Iles Britanniques est loin d'être connu comme il devrait l'être. Quelques bonnes enquêtes ont été faites en des points déterminés, mais elles ne constituent, par rapport à l'ensemble du pays, que des îlots minuscules. On peut dire que nous connaissons mieux les types qui se sont succédé depuis le préhistorique jusqu'aux premiers siècles de notre ère que les types contemporains [2].

[1] Nous ne parlerons pas d'une existence plus ancienne encore de l'homme dans les Iles Britanniques qui pourrait remonter, si les trouvailles de Reid Moir étaient acceptées par tous les savants, jusqu'au Pliocène au moins; mais les ossements humains les plus anciens sont aujourd'hui ceux de Piltdown.

[2] Nous espérons tout de même pouvoir, grâce aux travaux de Beddoe, Venn, Haddon, Gray, W. Bradbrooke et F. G. Parsons, J. J. Taylor, C. R. Browne, H. J. Fleure et T. C. James, R. W. Reid et John H. Hulligon, donner une image — mais elle sera à grands traits — des caractères ethniques de la Grande-Bretagne et de l'Irlande.

L'ANGLETERRE ET LE PAYS DE GALLES.

Nous commencerons l'examen des Iles Britanniques par l'étude de l'Angleterre, et du Pays de Galles. L'Ecosse, sur laquelle il y aura des choses intéressantes à rechercher, et l'Irlande pourront être l'objet d'un autre mémoire.

1. La répartition du cancer en Angleterre et dans le Pays de Galles.

Les travaux publiés jusqu'à présent sur le développement du cancer dans les Iles Britanniques ont montré d'assez grandes variations dans les taux de mortalité de ce pays selon les régions. Dans le volume qu'il a consacré à la répartition du cancer dans le monde, Hoffman a signalé toute une série d'enquêtes s'arrêtant à 1913 et dont j'imagine qu'il y a lieu de tenir compte. Le Sous-Comité des statisticiens de la Commission du cancer de la Société des Nations, par l'organe de notre collègue, M. Greenwood, a fait connaître la plus récente enquête sur ce sujet en publiant les résultats d'une importante étude statistique sur le cancer du sein et de l'utérus en Angleterre et dans le Pays de Galles [1]. Les deux cartes annexées à son rapport montrent, pour ces deux sortes de cancer, des variations géographiques considérables. Il faudra bien que ces différences soient expliquées.

Nous allons d'abord exposer ce que nous savons de la mortalité par cancer en Angleterre et dans le Pays de Galles en nous emparant pour cela des derniers renseignements statistiques. Les documents qui sont à la base de ce mémoire concernent la population de ces deux régions, âgée de 45 ans et plus, et les statistiques comprennent la période s'étendant de 1919 à 1923. Leurs résultats sont contenus dans le tableau N° 1. Nous avons dressé ce tableau selon l'ordre croissant des taux de mortalité.

Tableau N° 1.

Répartition géographique de la mortalité par cancer en Angleterre pour la population agée de 45 ans et plus, pendant la période de 1919 a 1923, arrangée selon l'ordre croissant des taux de mortalité.

Comtés	Total des décès, population âgée de 45 ans et plus	Moyenne	Population (1921) âgée de 45 ans et plus	Taux moyens annuels pour 10.000 de 45 ans et plus
Warwick	1.690	338	326.163	10,36
Lancaster.	8.920	1.784	1.197.174	14,91
York, East Riding	1.040	208	113.234	18.37
York, West Riding. . . .	7.435	1.487	793.007	18,75
Gloucester	1.965	393	208.130	18.88
Southampton	2.491	498,2	242.521	20.54
Leicester	1.337	267,4	126.278	21.18
Sussex East	1.817	363,4	168.640	21,55
Northumberland.	1.805	361	166.948	21,62
Stafford	3.294	658,8	300.933	21.89
Nottingham.	1.745	349	154.732	22,56
Durham	3.546	709,2	303.740	23,35
Devon	2.820	564	213.293	26,44
Lincoln, Parts of Lindsey .	1.406	281,2	105.441	26,67
Chester	3.478	695,6	260.636	26,69
Essex	5.005	1.001	368.488	27,17
Derby	2.519	503,8	167.867	30,01
Suffolk East	1.205	241	80.254	30,03

[1] Dr M. Greenwood. *Etudes statistiques sur le cancer du sein et de l'utérus d'après les données de la statistique officielle de l'Angleterre et du Pays de Galles*, Rapport à la Société des Nations, Genève, 1925.

Tableau N° 1 *(suite).*

RÉPARTITION GÉOGRAPHIQUE DE LA MORTALITÉ PAR CANCER EN ANGLETERRE POUR LA POPULATION AGÉE DE 45 ANS ET PLUS, PENDANT LA PÉRIODE DE 1919 A 1923, ARRANGÉE SELON L'ORDRE CROISSANT DES TAUX DE MORTALITÉ.

Comtés	Total des décès, population âgée de 45 ans et plus	Moyenne	Population (1921) âgée de 45 ans et plus	Taux moyens annuels pour 10.000 de 45 ans et plus
Norfolk	2.233	446,6	148.061	30,16
York, North Riding	1.771	354,2	114.506	30,93
Monmouth	1.263	252,6	81.436	31,02
Berks	1.347	269,4	84.956	31,71
Northampton	1.359	271,8	84.598	32,13
Oxford	930	186	56.780	32,76
Surrey	4.353	870,6	260.811	33,38
Somerset	2.444	488,8	141.328	34,59
Cumberland	1.229	245,8	69.324	35,46
Hereford	688	137,6	34 814	39,52
Kent	6.232	1.246,4	310.990	40,08
Isle of Wight	617	123,4	30.146	40,93
Dorset	1.414	282,8	67.486	41,90
Buckingham	1.417	283,4	67.528	41,97
Wilts	1.745	349	83.112	41,99
Lincoln, Parts of Kesteven.	651	130,2	30.646	42,49
Middlesex	6.677	1.335,4	314.034	42,52
Hertford	1.957	391,4	91.946	42,57
Sussex West	1.325	265	61.484	43,10
Salop	1.500	300	68.953	43,51
Bedford	1.257	251,4	57.261	43,90
Westmorland	441	88,2	19.871	44,39
Cornwall	2.216	443,2	99.145	44,70
Cambridge	932	186,4	39.774	46,86
Huntingdon	397	79,4	16.305	48,70
Isle of Ely	507	101,4	20.561	49,32
Lincoln, Parts of Holland.	571	114,2	23.060	49,52
Suffolk, West	845	169	33.799	50,00
Peterborough	334	66,8	13.196	50,62
Rutland	143	28,6	5.632	50,78

Et maintenant, les mêmes indications pour ce qui concerne le Pays de Galles:

Tableau N° 2.

RÉPARTITION GÉOGRAPHIQUE DE LA MORTALITÉ PAR CANCER AU PAYS DE GALLES POUR LA POPULATION AGÉE DE 45 ANS ET PLUS, PENDANT LA PÉRIODE DE 1919 A 1923, ARRANGÉE SELON L'ORDRE CROISSANT DES TAUX DE MORTALITÉ.

Comtés	Total des décès, population âgée de 45 ans et plus	Moyenne	Population (1921) âgée de 45 ans et plus	Taux moyens annuels pour 10.000 de 45 ans et plus
Glamorgan	2.791	558,2	257.082	21,71
Brecknock	268	53,6	15.346	34,93
Radnor	130	26	7.409	35,09
Carmarthen	786	157,2	40.976	38,36
Flint	572	114,4	27.487	41,62
Pembroke	521	104,2	24.543	42,46
Denbigh	924	184,8	41.138	44,92
Cardigan	459	91,8	19.942	46,03
Anglesey	377	75,4	15.662	48,14
Carnarvon	937	197,4	40.934	48,22
Merioneth	380	76	14.250	53,33
Montgomery	402	80,4	15.022	53,52

L'Angleterre et le Pays de Galles sont subdivisés en 61 comtés administratifs. Les statistiques que nous avons en mains contiennent les taux de mortalité de la population dans son ensemble (dès 45 ans) et aussi ceux des deux sexes séparés. Elles permettent ainsi des comparaisons intéressantes. A parcourir d'un coup d'œil la colonne des taux de décès, on constate aussitôt de très grandes différences en passant d'un comté à un autre. Nous en donnons quelques exemples:

Tableau N° 3.

Hommes		Femmes	
Comtés	Taux de mortalité par cancer	Comtés	Taux de mortalité par cancer
Peterbrough	52,73	Merioneth	58,19
Huntingdon	51,14	Montgomery	55,48
Montgomery	51,50	Ely (Isle of)	52,71
Lincoln, Parts of Holland	50,04	Rutland	52,53
Lancaster	14,06	Suffolk, West	50,62
Gloucester	18,83	Warwick	10,78
Leicester	20,49	Lancaster	15,32
Glamorgan	19,60	Gloucester	18,92
York, East Riding	17,45	York, East Riding	19,21
York, West Riding	17,34	Southampton	19,65
Warwick	9,90	Sussex East	20,70
		York, West Riding	20,05

Entre les extrêmes on constate, pour chaque sexe, des différences qui dépassent celles qui vont du simple au triple. On remarquera encore que ces maxima et ces minima n'apparaissent pas, pour les deux sexes, dans les mêmes comtés. Par exemple Merioneth, qui possède le taux maximum féminin, n'apparaît pas dans la colonne des maxima masculins, Peterborough, qui tient le record des décès masculins, ne se rencontre pas dans la colonne féminine. Pour bien faire, il faudrait pouvoir examiner, à la lumière des documents que nous allons utiliser, les taux de mortalité dans les deux sexes successivement.

Les sexes étant réunis, les maxima dès 48,50 et minima (au-dessous de 21,90) se présentent de la façon suivante (tableau N° 4), (la colonne des minima est arrangée selon la valeur croissante):

Tableau N° 4.

Comtés	Taux maxima arrangés selon leur valeur décroissante	Comtés	Taux minima arrangés selon leur valeur croissante
Montgomery	53,52	Warwick	10,36
Merioneth	53,33	Lancaster	14,91
Rutland	50,78	York, East Riding	18,37
Peterborough	50,62	York, West Riding	18,75
Suffolk, West	50,—	Gloucester	18,88
Lincoln, Parts of Holland	49,52	Southampton	20,54
Ely (Isle of)	49,32	Leicester	21,18
Huntingdon	48,70	Northumberland	21,62
		Stafford	21,89

Si les statistiques qui nous sont présentées sont d'égale valeur documentaire, nous devons remarquer qu'il y a, en Angleterre et dans le Pays de Galles, des comtés chez lesquels le cancer est très abondant, et d'autres comtés chez lesquels il est relativement rare. Quelles raisons faut-il invoquer pour expliquer de telles différences ?

En examinant la carte de la répartition géographique de la mortalité pour la population entière (cartogramme N° 33), nous voyons que les comtés à taux minima sont au centre du royaume (Warwick), puis au nord-ouest (Lancashire). Le premier est enclavé en plein dans les terres, le second est un comté maritime. Les taux qui viennent ensuite forment deux groupes, l'un au sud de Warwick: Gloucester; l'autre à l'est de Lancashire: les deux York. Nous composons là deux îlots dont les taux de mortalité ne dépassent pas 19,99 pour 10.000 habitants. Les taux maxima (40,50) composent également deux îlots: l'un à l'ouest, dans le Pays de Galles, comprend les comtés d'Anglesey, Cardigan, Carnarvon, Merioneth, Montgomery; l'autre, à l'est de l'Angleterre, renferme les comtés de Cambridge, Huntingdon, Lincoln (Parts of Holland), Peterborough, Rutland, Suffolk-West et Isle of Ely.

Si, à ces taux de 45,50 nous ajoutons ceux de 40 à 44,9, nous augmentons l'îlot occidental par les comtés de Pembroke, de Flint, et de Denbigh, appartenant au Pays de Galles et par celui de Salop (Shropshire) appartenant à l'Angleterre. Par le même moyen l'îlot oriental s'agrandit au nord du comté de Lincoln (Parts of Kesteven) et au sud-sud-est des comtés de Bedford, Buckingham, Hertford, Middlesex. Et ce nouveau groupement se prolonge jusqu'à la mer par le comté de Kent.

Nous avons également dressé des cartes de la répartition du cancer selon les comtés, à l'aide des taux de mortalité selon les sexes (cartogrammes N^{os} 34 et 35). Les deux îlots des maxima de l'ouest et de l'est se retrouvent; ils sont semblables pour ce qui concerne les hommes; agrandis pour ce qui concerne les femmes. L'existence de ces deux îlots principaux se présente donc pour nous comme une certitude.

Le minimum du comté de Warwick est présent dans les trois cartes. Il est en de même pour le comté de Gloucester.

Le groupe de Lancashire - York augmente légèrement son taux dans la série féminine. Si nous suivons le littoral marin de l'Angleterre et du Pays de Galles, nous rencontrons un comté à taux faible sur la mer d'Irlande: Lancashire; un autre peu élevé sur la rive de la mer du Nord: York (East). On peut y ajouter le comté de Gloucester qui embrasse le canal de Bristol. Tous les autres comtés maritimes dépassent le taux de mortalité de 20 pour 10.000 habitants. Parmi les taux relativement modérés (de 20 à 29,99 pour 10.000 habitants nous trouvons, en partant du sud-ouest des Iles Britanniques les comtés de Devon, Hampshire, East Sussex, Essex, Lincoln - Lindsey, Durham et Northumberland; de l'autre côté, sur la mer d'Irlande; la pointe du comté de Chester (Cheshire) et le comté de Glamorgan, au sud du Pays de Galles.

Les comtés maritimes, en majorité, ont des taux cancéreux relativement élevés. Cette constatation ne veut pas dire que nous invoquons la présence de la mer comme une raison mésologique.

On a remarqué, dans cette répartition géographique des taux cancéreux, des comtés subdivisés dont les taux présentaient entre eux des différences considérables. A quoi peut tenir une pareille variation ?

Le comté de Suffolk ne renferme pas, dans sa partie occidentale — la plus riche de cancer, — de grandes cités qui pourraient être explicatives de son taux de mortalité plus élevé. Le comté de Lincoln, lequel présente des différences qui vont, en gros, de 26 à 49, ne peut guère fournir d'arguments dans le même sens. Les comtés chargés de population comme Durham, Essex, Lancaster, Stafford, Warwick, York (East Riding), etc., n'ont qu'un taux de mortalité relativement faible.

Liste des comtés de l'Angleterre et du Pays de Galles

arrangés selon la numérotation employée dans les cartogrammes.

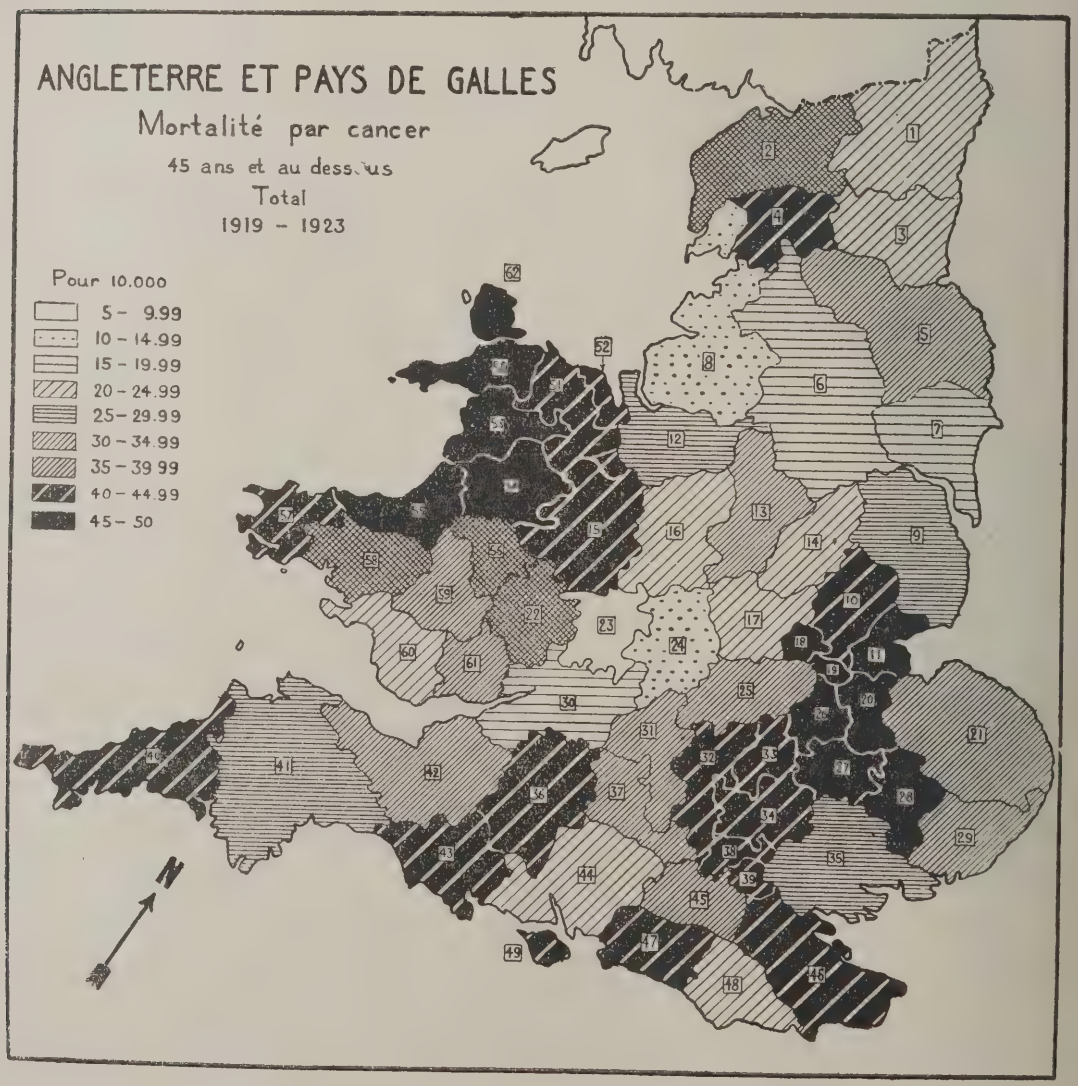
1. Northumberland
2. Cumberland
3. Durham
4. Westmorland
5. York, North Riding
6. York, West Riding
7. York, East Riding
8. Lancashire
9. Lincoln, Parts of Lindsey
10. Lincoln, Parts of Kesteven
11. Lincoln, Parts of Holland
12 Cheshire
13. Derby
14. Nottingham
15. Salop (Shropshire)
16. Stafford
17. Leicester
18. Rutland
19. Soke of Peterborough
20. Isle of Ely
21. Norfolk
22. Hertford
23. Worcester
24. Warwick
25. Northampton
26. Huntingdon
27. Cambridge
28. Suffolk-West
29. Suffolk-East
30. Gloucester
31. Oxford
32. Buckingham
33. Bedford
34. Hertford
35. Essex
36. Wilts
37. Berks
38. Middlesex
39. Londres
40. Cornouailles
41. Devon
42 Somerset
43. Dorset
44. Hampshire
45. Surrey
46. Kent
47. Sussex-South
48. Sussex-East
49. Ile de Wight
50. Carnarvon
51. Denbigh
52. Flint
53. Merioneth
54. Montgomery
55. Cardigan
56. Radnor
57. Pembroke
58. Carmarthen
59. Brecknock
60. Glamorgan
61. Monmouth
62. Anglesey.

Cartogramme N° 33.

ANGLETERRE ET PAYS DE GALLES.

Répartition géographique de la mortalité par cancer parmi la population âgée de 45 ans et plus, période 1919-1923.

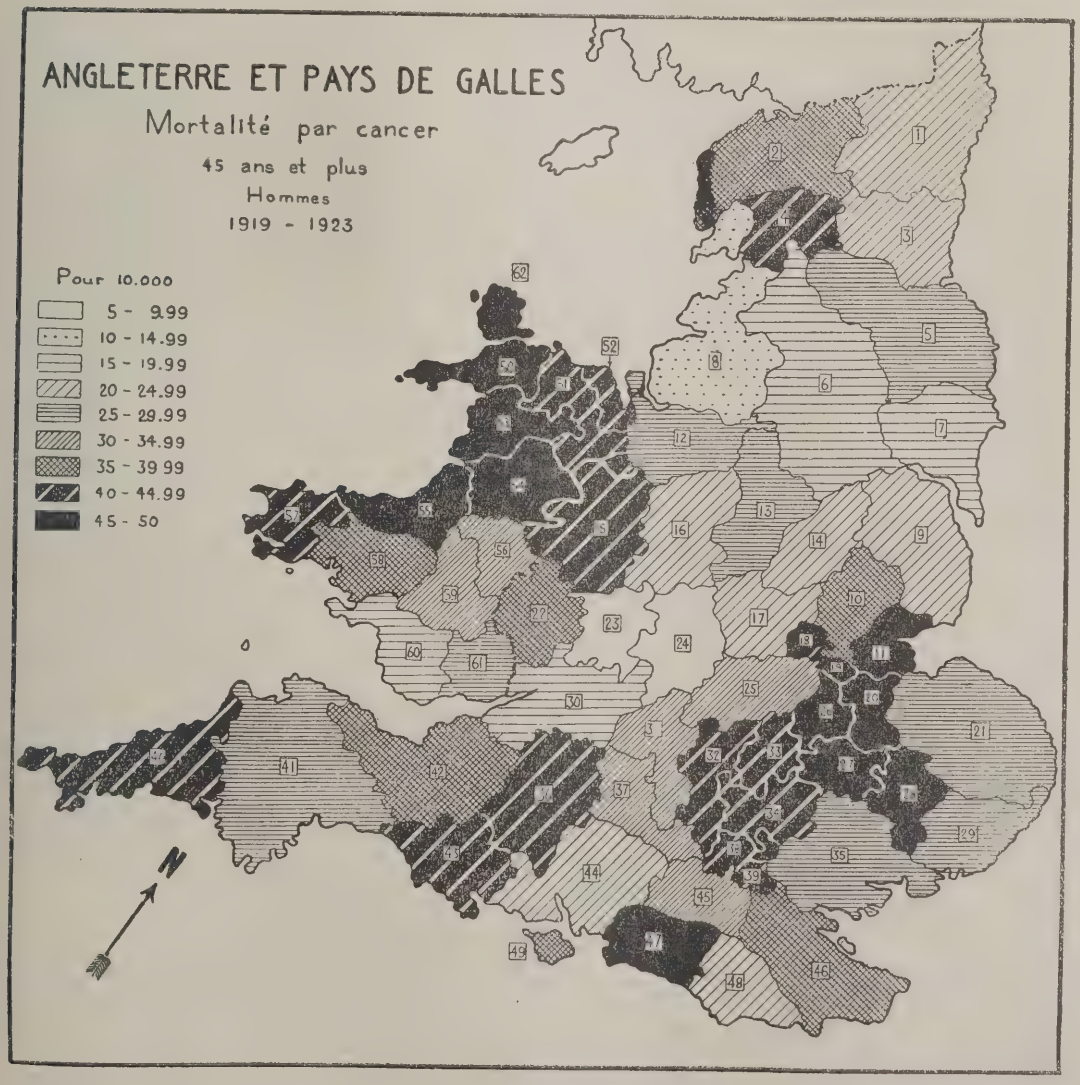
(Population totale.)



Cartogramme Nº 34.

Angleterre et Pays de Galles.

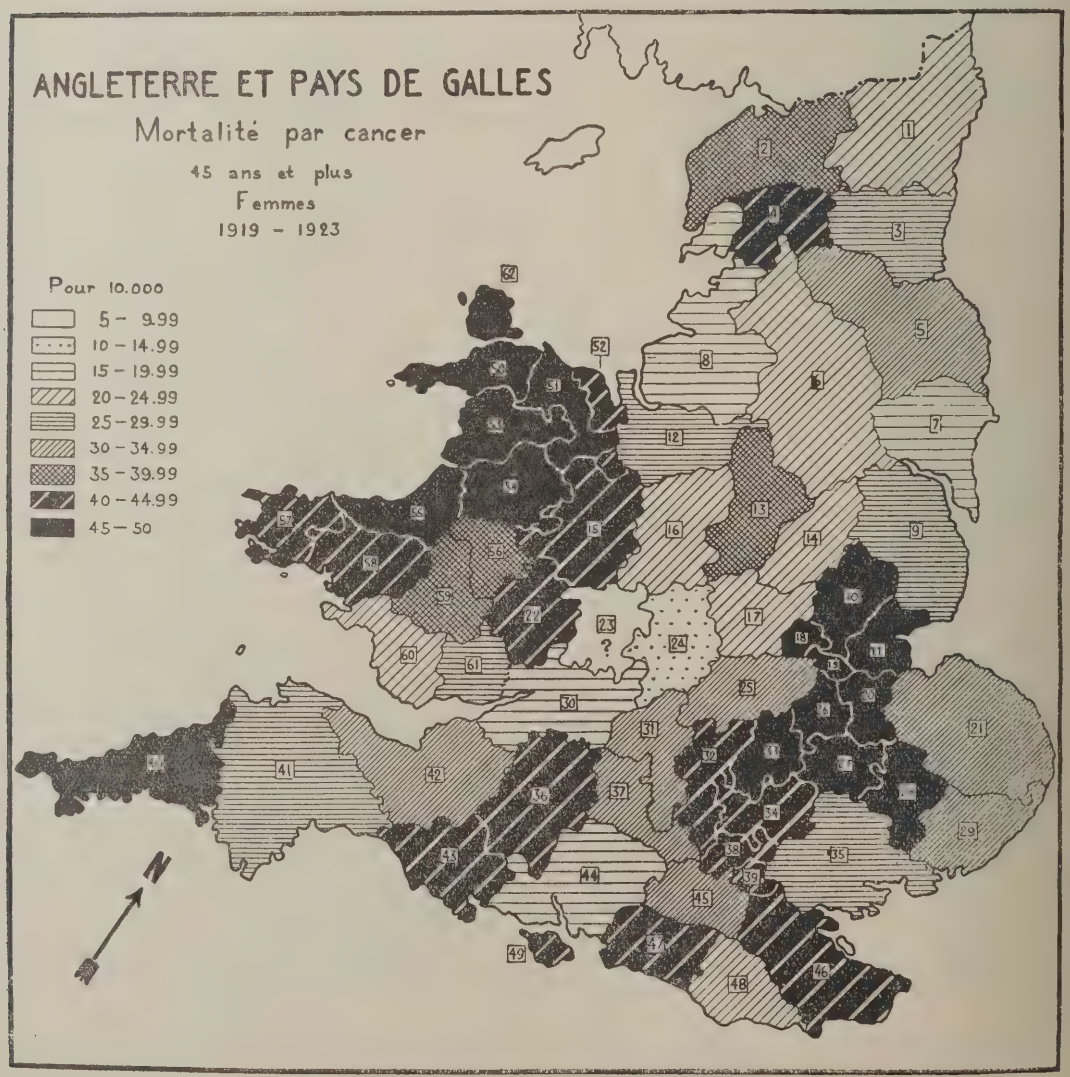
Répartition géographique de la mortalité par cancer parmi les hommes *âgés de 45 ans et plus ; période 1919-1923.*



Cartogramme N° 35.

ANGLETERRE ET PAYS DE GALLES.

Répartition géographique de la mortalité par cancer parmi les femmes *âgées de 45 ans et plus, période 1919-1923.*



Voici (tableau N° 5) les taux cancéreux des comtés qui ont une population (âgée de 45 ans et plus) dépassant 300.000 âmes.

Tableau N° 5.

Comtés	Population (1921) âgée de 45 ans et plus	Taux de mortalité par cancer
Durham	303.730	23,35
Essex	368.488	27,17
Lancaster	1.197.174	14,91
Stafford	300.933	21,89
Warwick	326.163	10,36
York, West Riding . . .	793.007	18,75
Middlesex	314.034	42,52
Kent	310.990	40,08

Je remarque, au contraire de ce qu'on pourrait, *a priori*, supposer, que les comtés dont la population (âgée de 45 ans et plus), n'est pas très abondante, semblent présenter des taux cancéreux relativement élevés. A quelle cause faut-il attribuer ce phénomène ?

Je rassemble (tableau N° 6) les comtés dont la population n'atteint pas 50.000 habitants.

Tableau N° 6.

Comtés	Population (1921) âgée de 45 ans et plus	Taux de la mortalité par cancer
Cambridge	39.774	46,86
Isle of Ely	20.561	49,32
Hereford	34.814	39,52
Huntingdon	16.305	48,70
Lincoln, Parts of Holland	23.060	49,52
Lincoln, Parts of Kesteven	30.646	42,49
Peterborough	13.196	50,62
Rutland	5.632	50,78
Suffolk, West	33.799	50,—
Westmorland	19.871	44,39
Isle of Wight.	30.146	40,93

Ce tableau, mis en parallèle avec le précédent, semble montrer que les taux de mortalité ne devraient pas être envisagés comme ayant la même valeur comparative dans tous les comtés.

Pour apporter encore un peu de clarté dans cette recherche, je veux mettre en regard dans le tableau ci-après (tableau N° 7) les comtés ayant chacun une population à peu

près de même valeur numérique (entre 105.000 et 160.000 habitants âgés d'au moins 45 ans):

Tableau N° 7.

Comtés	Population âgée d'au moins 45 ans	Taux de la mortalité par cancer
Leicester	126.278	21,18
Lincoln, Parts of Lindsey	105.441	26,67
Norfolk	148.061	30,16
Nottingham	154.732	22,56
Somerset	141.328	34,59
York, East Riding. . . .	113.234	18,37
York, North Riding . . .	114.506	30,93

Des phénomènes de statistiques expliquent-ils complètement la présence de taux aussi différents ? Je me le demande en voyant des populations de quantité égale dans les deux York présenter des taux cancéreux très éloignés l'un de l'autre.

Il y a là des recherches dont je livre le soin à mes collègues plus spécialisés que moi dans la science de la statistique.

Mais il est évident que si les valeurs que nous voulons considérer comme des valeurs comparatives représentant le taux de mortalité par cancer sont soumises à des causes d'erreurs d'ordre purement statistique, nous aurons bien de la peine à les utiliser sainement au moment des rapprochements anthropologiques.

Il est nécessaire de faire le même exposé avec les comtés du Pays de Galles.

D'abord ceux (tableau N° 8) qui ont moins de 20.000 habitants:

Tableau N° 8.

Comtés	Population	Taux de mortalité par cancer
Anglesey	15.662	48,14
Brecknock	15.346	34,93
Cardigan	19.942	46,03
Merioneth	14.250	53,33
Montgomery	15.022	53,52
Radnor	7.409	35,09

Puis ceux (tableau N° 9) qui ont plus de 40.000 habitants:

Tableau N° 9.

Comtés	Population	Taux de mortalité par cancer
Carmarthen	40.976	38,36
Carnarvon	40.934	48,22
Denbigh	41.138	44,92
Glamorgan.	257.082	21,71

2. La stature humaine en Angleterre et dans le Pays de Galles.

La taille humaine pour l'ensemble des Iles Britanniques — y compris l'Ecosse et l'Irlande — mérite d'être étudiée avec plus de détails encore qu'elle ne l'a été. Elle nous révélerait sûrement, au sujet des anciennes populations fixées dans ces Etats, des faits intéressants. Elle aiderait à établir des raccords, des filiations entre les populations anciennes et les populations actuelles. Certaines régions sont habitées par des hommes dont la stature moyenne présente, sur des espaces relativement peu étendus, des différences assez notables: elles pourraient sous-entendre des qualités ethniques originairement différentes. N'oublions pas l'arrivée, au moins avec l'introduction du bronze, de types brachycéphales. Il faudrait savoir quelles étaient les autres caractéristiques morphologiques associées à cette forme cranienne.

Les documents concernant la taille en Angleterre nous les devons d'abord à Beddoe [1] dont le nom se retrouve sans cesse sous notre plume, puis au Comité anthropométrique de l'Association britannique pour l'avancement des sciences qui a travaillé de 1879 à 1882 et dont le rapport final a paru en 1883 [2].

Antérieurement, Lane Fox avait publié des documents sur le Surrey [3]; il faut encore citer les travaux postérieurs de Haddon, Taylor, Bradbrooke et Parsons et, pour le Pays de Galles, celui de Fleure et James [4]. D'autres auteurs ont apporté leur contribution à la stature de l'Ecosse et de l'Irlande. Nous ne parlons pas de leurs travaux pour le moment. Le rapport du Comité anthropométrique a pour base les mesures de 8.614 individus de 23 à 50 ans (6.194 cas pour l'Angleterre et 735 pour le Pays de Galles), appartenant aux diverses classes de la société. C'est, à n'en pas douter, un chiffre absolument insuffisant pour avoir une idée précise de la stature dans les Iles Britanniques.

Mais c'est déjà quelque chose.

La taille moyenne des Iles Britanniques est élevée. Elle est probablement égale à celle de la Scandinavie. Ce sont les Ecossais qui sont les plus grands de tous. (On sait que les Ecossais de Galloway sont les hommes les plus grands de la terre.) Si nous limitons à l'Angleterre et au Pays de Galles nos connaissances, nous trouvons les moyennes suivantes:

	Tailles	*Moyennes*
Anglais	de 1.692 à 1 m. 720	1.706
Gallois	de 1.688 à 1 m. 694	1.691

Les Irlandais ont une stature un peu supérieure à celle des Anglais.

Il faut maintenant considérer la répartition des tailles par comtés dans les deux divisions du royaume dont nous avons à parler.

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[1] Beddoe: *On the stature and bulk of Man in the British Isles*, London, 1870. — Id.: *The races of Britain, a contribution to the Anthropology of Western Europe*, Bristol and London, 1885.

[2] Beddoe: British Association for the Advancement of Science, *Report of the Anthropometric Committee* in « Annual Report of the Association », dès 1878, final Report 1883, page 253.

[3] Col. A. Lane Fox: *Report of the mensuration in two regiments of milice of Royal Surrey*, « The Journal of the Anthropological Institute », 1877, page 443.

[4] Haddon, A. C.: *On the Physical Characters of the Inhabitants of Barley, Herts*. Report Anthropometric Committee, British Association for the Advancement of Science, 1897, page 503.

Taylor, J. J.: *Anthropometric Notes on the Inhabitants of Cleckheaton*, Yorkshire, id., page 507.

Bradbrooke, W. et Parsons, F. G.: *The Anthropology of the Chiltern Hills*, « The Journal of the Anthrop. Instit. of Great Britain and Ireland », 1922, page 113.

Fleure, H. J. et James, T. C.: *Geographical Distribution of Anthropological Types in Wales*, « Journal of the Royal Anthrop. Instit. of Great Britain and Ireland », volume XVLI, 1916, page 35.

Pour rendre plus compréhensible la physionomie de la stature en Angleterre, j'arrange, selon les documents fournis par le Comité anthropométrique et selon leur valeur croissante (tableau N° 10), les tailles des différents comtés.

Tableau N° 10.

Comtés	Taille moyenne	Comtés	Taille moyenne
Hereford et Middlesex . .	1,684	Northampton	1,709
Shropshire	1,685	Leicester et Rutland . . .	1,709
Somerset	1,685	Nottingham	1,712
Gloucester et Bristol . . .	1,685	Hampshire	1,714
Wilts	1,686	Lancashire	1,715
Hereford et Monmouth .	1,688	Kent	1,718
Surrey	1,689	Berks	1,718
Cheshire	1,690	Suffolk.	1,720
Oxford et Buckingham . .	1,696	Durham	1,720
Cambridge et Huntingdon .	1,696	Derby	1,723
Londres	1,701	Stafford	1,724
Dorset	1,702	Cornouailles	1,726
York, West Riding et Sheffield	1,702	Essex	1,727
Bedford	1,704	Norfolk	1,728
Devon	1,704	Lincoln	1,732
Warwick	1,707	Cumberland et Westmorland	1,737
Worcester	1,708	Northumberland	1,743
Sussex	1,709	York, North and East Ridings	1,754

Il y a, entre la taille minimum de Hereford et Middlesex et la taille maximum de York (North and East Ridings) une différence de 7 unités, ce qui est beaucoup pour un pays dont l'ensemble apparaît, pour les yeux qui n'envisagent que les caractères moyens, comme un Etat assez homogène. Six comtés n'atteignent pas la taille de 1 m. 70 et dix atteignent et dépassent 1 m. 72.

La taille dans le Pays de Galles.

Nous avons établi, pour le Pays de Galles, le même arrangement des statures moyennes selon l'ordre croissant de leur valeur:

Tableau N° 11.

Comtés	Taille moyenne
Carmarthen	1,689
Pembroke	1,689
Glamorgan.	1,689
Brecknock	1,692
Cardigan.	1,692
Radnor	1,693
Anglesey.	1,699
Carnarvon	1,699
Merioneth	1,699
Montgomery	1,699
Flint	1,703
Denbigh.	1,703

Les comtés du Pays de Galles ne montrent pas des différences aussi étendues que ceux des Iles Britanniques. Ici, entre le minimum et le maximum, nous n'avons que deux unités à peine.

A l'aide de ces divers documents — encore une fois, très insuffisants pour un aussi grand territoire que l'Angleterre et le Pays de Galles — nous avons dressé la carte N° 36 annexée à ce chapitre. Elle permet de saisir immédiatement combien, en gros, la partie occidentale de l'Angleterre — avec aussi une forte pénétration dans le centre — et le Pays de Galles tout entier, diffèrent, sous le rapport de la stature, du reste du royaume. Une telle carte établie non plus à l'aide de 6.900 observations, mais à l'aide de quelques centaines de mille cas garderait-elle la même physionomie ?

Dans le Pays de Galles, la stature en général est moins élevée que dans le reste des Iles Britanniques. C'est dans le coin nord-est, où se trouvent les comtés de Flint et de Denbigh, que la taille est la plus haute (1 m. 703). Dans le sud, au contraire, la stature est la moins élevée. Sur le littoral du golfe de Bristol, les comtés de Pembroke, Carmarthen et Glamorgan ont une moyenne de 1 m. 689. En allant vers le nord, la taille s'élève. Les comtés de Brecknock, Radnor, Cardigan ont une taille de 1 m. 692 à 1 m. 693. Ceux de Montgomery, Merioneth, Carnarvon ont des habitants dont la stature est de 1 m. 699 [1]. Nous n'avons pas ici à tenter d'expliquer ces variations géographiques, dont plusieurs sont dues, certainement, à des faits historiques.

3. L'indice céphalique en Angleterre et dans le Pays de Galles.

L'indice céphalique des Iles Britanniques est mal connu. L'infatigable Beddoe [2] a publié une série de mémoires le concernant, et ses études avaient porté sur diverses régions de l'Angleterre. On peut y ajouter les observations de Venn sur les étudiants de l'Université de Cambridge [3]. Ces dernières, sur des territoires malheureusement mal délimités, nous fournissent quelques renseignements, mais, à cause même de leur peu de précision géographique, nous ne pouvons guère les utiliser. Le Comité pour les études anthropométriques de l'Angleterre n'a pas, que je sache, publié les documents qu'il a dû recueillir et dont l'anthropologie tirerait tant de profits. Sur l'Irlande et l'Ecosse, nous avons quelques mémoires de Browne, de Haddon, de MacLean, de Gray, et Gray et Tocher, qui n'ont pas à être cités ici.

Dans son *Mémoire sur l'histoire de l'indice céphalique*, Beddoe, après avoir confirmé, dans ses grandes lignes, les vues de Thurnam relatives à la superposition sur l'antique

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[1] Ce sont là, répétons-le, les données qui nous ont été fournies par le rapport final du Comité anthropométrique de l'Association britannique pour l'avancement des sciences (1883). L'important travail de H. J. Fleure et T. C. James: *Geographical Distribution of Anthropological Types in Wales*, « The Journal of the Royal Anthropological Institute of Great Britain and Ireland » (volume XLVI 1916, page 85), a complété notre documentation, surtout en ce qui concerne le comté de Cardigan. Voici quelques-unes des moyennes relatives à la stature que nous avons pu établir. Elles ne diffèrent que peu des chiffres cités plus haut:

Denbighshire Upland		1,693
North Montgomeryshire		1,689
Western Montgomeryshire		1,662
Cardigan	Plynlymon Moorland	1,689
	Tregaron et Llnddewibrefi	1,707
	Newquay	1,686
	Llandyssul, Pencarrey, etc.	1,669
	Newcastle Emlyn	1,699
Carmarthen, Towy Valley		1,693
South East Carmarthenshire		1,671

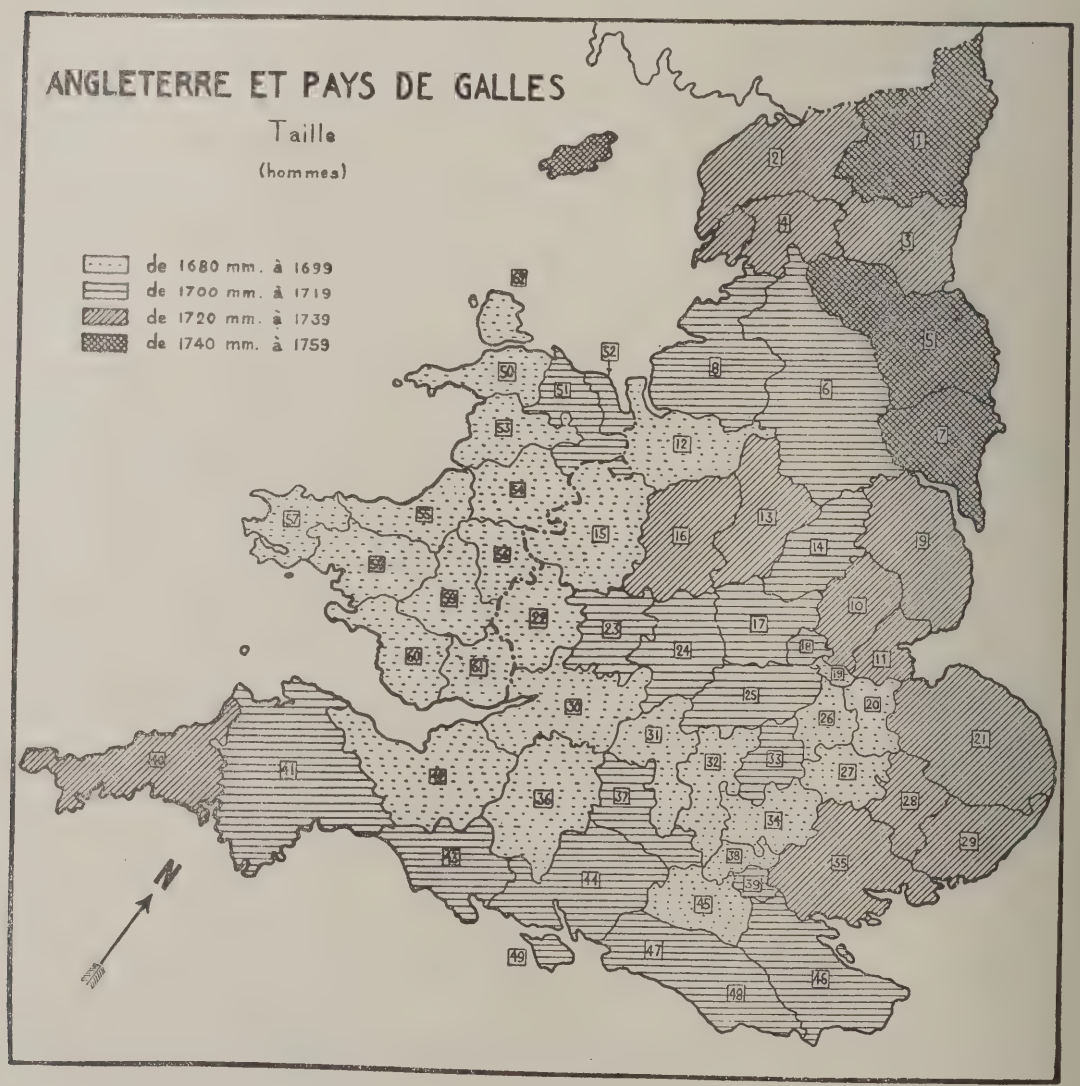
[2] Beddoe: *Mémoire sur l'histoire de l'indice céphalique des Iles Britanniques*, « L'Anthropologie », 1894, page 513.

[3] Venn: *Cambridge Anthropometry*, « Journ. Anthr. Inst. Gr. Britain and Ireland », 1888, page 140. Les observations recueillies par Venn l'ont été selon une technique particulière qui n'est pas celle de la plupart des anthropologistes. Par exemple, la plus grande longueur du crâne n'est pas mesurée dès la glabelle, mais dès le centre frontal, c'est-à-dire dès l'ophryon.

Cartogramme N° 36.

Angleterre et Pays de Galles.

Répartition géographique de la taille moyenne (hommes). *Carte dressée d'après les documents fournis par l'*« Anthropometric Committee B.A.A.S. », *1883, T. III, page 262. 6.929 cas, de 23 à 50 ans. Angleterre: 6.194 cas. Pays de Galles : 735 cas.*



race dolichocéphale, d'un type brachycéphale, à l'âge du bronze (round barrows), pense que la domination romaine peut avoir été l'occasion de mélanges ethniques en Angleterre. Mais il s'agit là plus d'une vue théorique que d'un résultat acquis par de suffisantes observations. Les quelques indications que l'on possède sur les squelettes de cette époque montrent que la population anglaise avait, en bien des endroits, conservé son type primitif.

La couche ethnique qui vient ensuite a été appelée communément anglo-saxonne. La forme prédominante de la tête chez les Anglo-Saxons «constitue une légère modification du type germanique des tombes en rangées, ou type Hohberg ». L'indice céphalique moyen des hommes est alors de 74,59. Aux yeux de Beddoe, la conquête normande renforça en Angleterre l'élément brachycéphale, surtout à cause « de la multitude mélangée des immigrants venus de différentes régions de la France ». Les tableaux qu'a publiés cet auteur montrent — mais il faut reconnaître que les séries mises en comparaisons ne sont pas très considérables — cette superposition chronologique de types humains.

A la race primitive d'indice céphalique très dolichocéphale (probablement 72) succèdent les gens de l'âge du bronze (round barrows), population toute différente, ayant un indice céphalique de 80 environ — ayant eu même avant sa fusion avec la population ancienne un crâne encore plus arrondi — précédant les Romano-Bretons, puis les Saxons, dont les indices céphaliques sont l'un et l'autre d'environ 75. Quant aux « envahisseurs danois ou scandinaves qui suivirent, rien de positif ne put être déterminé ». Au moyen âge « nous trouvons les mésocéphales en prédominance et de nouvelles fréquences de brachycéphales, la moyenne des indices de nos mensurations étant d'environ 78 » [1]. Il faudrait pouvoir comparer, aux lieux mêmes où ces populations anciennes ont été retrouvées, les types actuels des Iles Britanniques, avec leurs prédécesseurs. Malheureusement, l'Angleterre comme la Suisse, en particulier, souffre d'un manque d'intérêt de ses savants pour les recherches anthropologiques; Beddoe constate « déjà la pénurie des crânes récents dans les collections publiques autant que privées » de l'Angleterre.

Il est bien certain, hélas, que les indications que nous allons donner ne représentent qu'une très faible fraction de ce qu'il serait indispensable de savoir.

Deniker a groupé par comtés les indices moyens donnés par Beddoe, puis les indices de Beddoe associés à ceux de Venn [2].

Le tableau suivant montre ce que ces auteurs nous ont fait connaître:

Tableau N° 12.

LES INDICES CÉPHALIQUES EN ANGLETERRE, SELON LES COMTÉS.

	Indice céphalique Beddoe	Indice céphalique Venn	Les deux séries réunies
Cornouailles	78,7	—	—
Sud de Devon	78,3	—	—
Nord de Devon	78,1	—	—
Ouest de Somerset	76,8	—	—
Sud de Somerset	78,5	—	—
Est de Somerset	77,8	—	—
Bristol (sud de Gloucester)	77,7	—	—
Sud de Gloucester	77,6	—	—
Wiltshire	76,8	—	—
Total sud-ouest de l'Angleterre	77,6	—	—

[1] BEDDOE: *Mémoire sur l'histoire de l'indice céphalique des Iles Britanniques,* « L'Anthropologie », 1894, page 524. Ouvrage déjà cité.

[2] Les indices obtenus par Venn ont été modifiés par Deniker pour les ramener à une saine comparaison avec ceux de Beddoe.

Tableau N° 12 *(suite).*

LES INDICES CÉPHALIQUES EN ANGLETERRE, SELON LES COMTÉS.

	Indice céphalique Beddoe	Indice céphalique Venn	Les deux séries réunies
Yorkshire et nord de l'Angleterre	77,8	—	—
Yorkshire	78,2	—	—
Flamborough (Yorkshire)	79,3	—	—
Est de l'Angleterre (sud de York)	78,6	79,–	78,9
Cumberland et Lancashire	77,5	—	—
Sud-est de l'Angleterre	78,9	78,3	78,7
Nord et centre de l'Angleterre	77,7	—	—
Nord de l'Angleterre	—	78,7	—
Centre	—	78,2	—
Ouest et sud-ouest	—	78,6	—
Sud	—	78,3	—
Angleterre en général	*77,8*	*78,4*	*78,2*

L'examen de ce tableau N° 12 permet cette remarque: il y a très peu de variations de l'indice céphalique entre les diverses régions de l'Angleterre. Deniker montre cette uniformité en faisant constater que la variation la plus grande est celle qu'il y a entre l'indice 76,8, à l'ouest du comté de Somerset, et l'indice 79,3 provenant du village de Flamborough, dans le Yorkshire. Et si l'on exclut ces deux régions, ajoute-t-il, la variation se trouve resserrée entre les indices de 77,5 (Cumberland et Lancashire) et 78,9 (est de l'Angleterre) soit un écart de 2,4 à peine. Deniker continue ainsi: « D'ailleurs, à part la région compacte qui se compose du Wiltshire, du nord de Somerset et du sud de Gloucester, ainsi que de la région douteuse (vu le nombre infime de mensurations) de Lancashire et de Cumberland, toute l'Angleterre n'est peuplée que de sous-dolichocéphales dont les indices ne varient guère qu'entre 78,1 et 78,9. Aussi, sur ma carte (carte N° 37) du présent chapitre, ce pays apparaît-il presque uniformément colorié de la teinte des sous-dolichocéphales. L'indice moyen des Anglais, trouvé par Beddoe (77,8), diffère à peine de celui que donne le Dr Venn (78,4) ou qui ressortent des séries de la British Association, citées par Beddoe, 78, 78,3, et 77,7. La moyenne de tous ces chiffres est 78. »

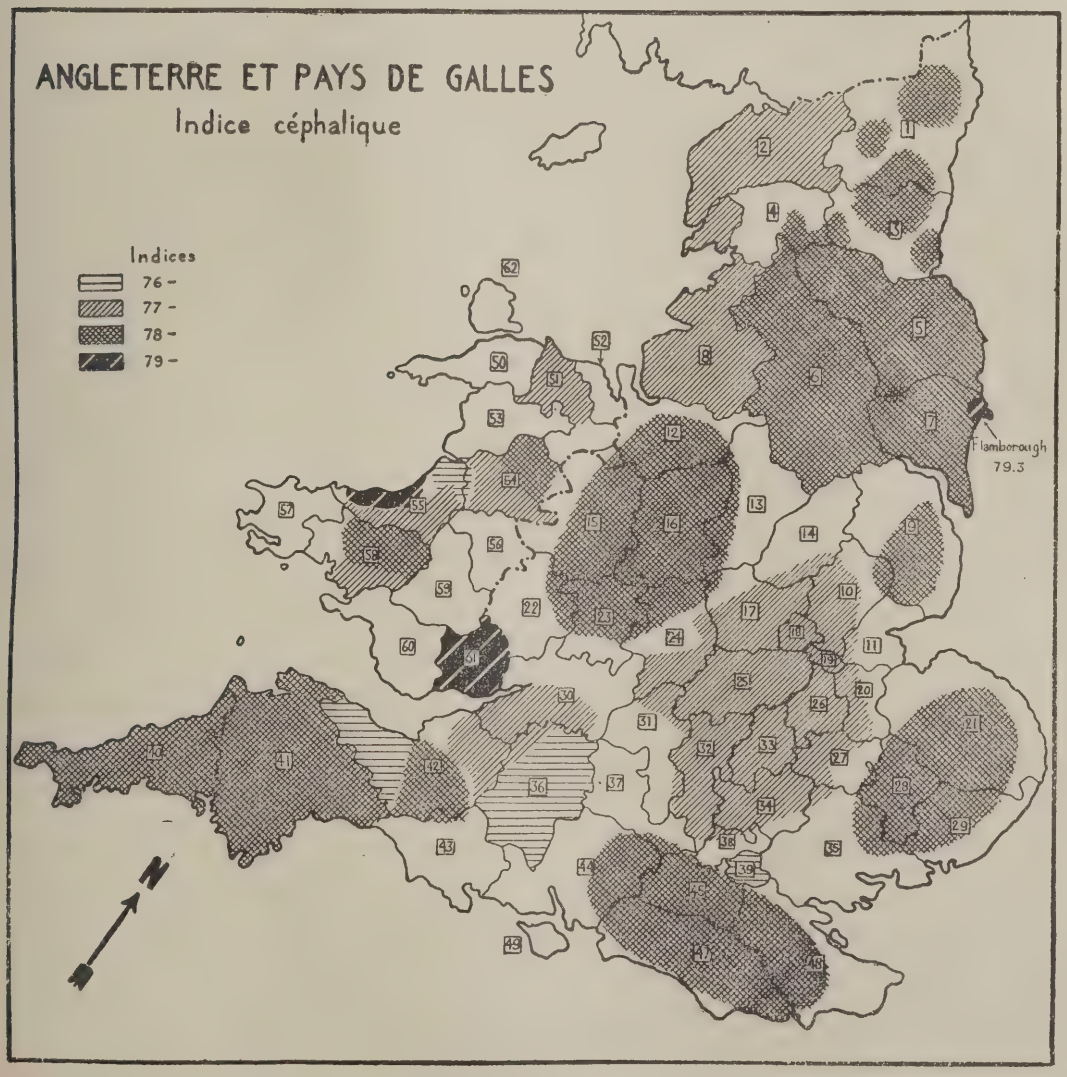
Je crois bien, comme Deniker, que l'Angleterre renferme surtout des populations dolichocéphales. Mais lui, pour le travail qu'il envisageait, pouvait se contenter d'une telle vue générale. Nous ne le pouvons pas. Nous le pouvons d'autant moins lorsque nous considérons la carte de la répartition du taux du cancer et que nous y constatons les variations que nous avons soulignées. Les conclusions que nous pourrons exprimer seront, à cause de notre insuffisante documentation, pour une grande partie, soumises à des revisions.

Nous avons vu précédemment quels étaient les indices céphaliques moyens fournis par les études dans le Pays de Galles. Ils sont aussi, bien entendu, tout à fait insuffisants pour nous donner une image fidèle des types craniens gallois. Dans les comtés du sud nous trouvons des indices qui s'échelonnent de 77,5 à 79,56. Oserions-nous procéder par extension et mettre, à l'aide de couleurs prises chez le voisin, des teintes sur des comtés dont nous ne savons rien ? Le comté de Brecknock touche celui de Monmouth dont l'indice céphalique paraît être assez élevé (79). Carnarvon a probablement un indice de 78 ? Pouvons-nous l'étendre à Pembroke dont je ne sais rien ?

Cartogramme Nº 37.

Angleterre et Pays de Galles.

Carte approximative de l'indice céphalique dans quelques régions de l'Angleterre et du Pays de Galles, dressée d'après les travaux de Beddoe, Venn, Fleure et James, Parsons, Bradbrooke, etc.



Peut-être, d'une manière générale, le sud du Pays de Galles présente-t-il des crânes moins dolichocéphales que les comtés du nord ? Mais ce n'est peut-être là qu'une vue momentanée ? Le nord du comté de Cardigan a l'indice céphalique moyen le plus faible de tous ceux que je connais dans cette région (76,1). En allant plus au nord du Pays de Galles, je ne retrouve aucun indice atteignant 79.

Rappelons-nous maintenant ce qu'a montré l'étude de la stature dans le Pays de Galles.

Nous avons vu que les comtés septentrionaux présentaient en moyenne une taille plus élevée que les comtés méridionaux.

Pouvons-nous associer à la stature moins haute des populations méridionales un crâne moins dolichocéphale ? Nous avons chance qu'il en soit ainsi; les apparences semblent nous l'indiquer. Mais nous aimerions bien aller au delà des apparences et savoir ce que nous montrerait la réalité.

D'autre part, souvenons-nous que les comtés méridionaux ont des taux de cancer moins élevés que ceux des comtés septentrionaux.

Alors, serait-il possible de conclure en disant que dans le Pays de Galles le cancer atteint plus fréquemment les populations dont la stature est la plus haute et le crâne le plus dolichocéphale, c'est-à-dire la population qui réalise le mieux le type de la race nordique ? Ce n'est pas encore certain. Nous ne décelons, à l'aide de ces divers caractères, qu'une présomption. L'avenir dira ce qu'elle vaut.

4. La couleur des cheveux et des yeux.

Il est bien certain que pour un grand pays comme l'Angleterre les documents que l'on possède sur ces caractérisations humaines sont très loin d'être suffisants. Leur classification même n'est pas toujours facile. On sait combien les méthodes d'observations pour connaître la couleur des yeux et des cheveux ont été discutées et combien la mise en œuvre de tels renseignements a été l'objet de débats entre les anthropologistes.

Et puisqu'il est question ici de l'Angleterre, on ne saurait oublier que c'est à un ressortissant de ce pays, J. Beddoe, que l'on doit d'avoir compris, jadis, pour les observations de la couleur, la nécessité des grands nombres. Ses enquêtes personnelles sont parmi les plus abondantes qui soient. Nous aurons naturellement à les utiliser.

Disons tout de suite comment Beddoe dressait ses statistiques de la couleur des cheveux. Il n'admettait que cinq divisions: roux, blond, brun, foncé et noir. « Les roux, dit-il, comprennent toutes les nuances tirant sur le rouge plutôt que sur le brun, le jaune ou le lin. Le blond comprend le jaune lin, le jaune doré, quelques-uns des tons les plus clairs du brun et quelques châtain pâle dans lesquels la présence du rouge n'est pas certain. Le brun comprend les innombrables nuances répondant à la dénomination française de châtain et de châtain clair, mais avec une acceptation limitée du côté du foncé. Les foncés concernent la plupart des cas qualifiés de bruns par les Français et le châtain foncé. Les noirs répondant aux noirs proprement dits ou noirs absolus. »

On voit qu'il ne peut pas ne pas y avoir, dans de telles classifications, une part d'arbitraire personnel.

Lorsqu'on examine les yeux, on constate entre les iris des différences plus grandes encore que celles des colorations capillaires. Et l'on conçoit qu'ici les méthodes aient été encore plus divergentes que pour la couleur des cheveux. Beddoe admet trois classes d'yeux: les clairs, les foncés et les intermédiaires. Dans les yeux clairs, il fait rentrer tous les yeux bleus proprement dits, les bleus cendrés et les gris clairs, c'est-à-dire les trois bleus de la gamme chromatique de Broca.

Dans la classe des foncés, il range les yeux, dits noirs, eux-mêmes sous le nom de bruns, et les châtain foncé.

Dans la troisième classe, celle des yeux intermédiaires, il place les yeux gris foncé et brunâtres, les châtains très clairs et jaunâtres, les gris châtains constitués par des stries orangées s'irradiant sur un fond gris bleu et toute autre nuance de ton moyen sur laquelle on serait embarrassé. Topinard, au moment de ses grandes enquêtes en France, accepta les méthodes de Beddoe[1].

Avant d'indiquer quelle est, en Angleterre, la répartition approximative des types humains basée sur la couleur des yeux et des cheveux, je rappelle ce que Beddoe appelait, dans l'étude de la coloration des cheveux, l'indice de nigrescence — qu'on aurait pu appeler indice de pigmentation. Considérant que, dans les cheveux noirs, il y a un maximum de pigmentation, il double leur nombre exprimé, y ajoute les cheveux bruns foncés et en retranche le total des cheveux roux et blonds selon cette formule:

$$(2 \times \text{noirs} + \text{bruns}) - (\text{blonds} + \text{roux}) = \text{Indice de nigrescence.}$$

Ce doublement favorise, dans le résultat numérique, les cheveux noirs. Mais comme cette opération est répétée partout, les résultats restent comparables. Mais ils restent comparables, bien entendu, dans les séries mêmes recueillies par Beddoe.

Pour représenter l'état de la pigmentation en Angleterre et dans le Pays de Galles, nous avons utilisé les analyses de Beddoe, les résultats de la grande enquête de la Commission anthropométrique dont il a déjà été question et quelques autres documents.

La carte N° 38 représente la répartition du type brun d'après Beddoe. Elle est basée sur 13.088 observations. Pour une population aussi nombreuse que celle des territoires que nous envisageons, on avouera que ce n'est pas beaucoup, mais le grand intérêt de cette carte provient de ce qu'elle a été établie à l'aide d'observations faites par la même personne, de la même façon, analysées selon une même méthode. Ce sont les indices de nigrescence qui y sont indiqués.

Tout d'abord on remarquera que les comtés de l'Est, dès le 52° de latitude nord à peu près, jusque proche de la frontière de l'Ecosse, jusqu'au comté de Durham, sont des territoires où les hommes sont très peu pigmentés. Les deux Suffolk, Norfolk, les trois Lincoln, les deux York: East Riding et North Riding, touchant la mer du Nord, sont marqués par des signes négatifs. Il en est de même pour les comtés de Westmorland, de Cumberland sur la mer d'Irlande. Il faut ajouter, comme présentant un tel indice, les comtés intérieurs de Derby et de Nottingham. Une autre région de faible indice prolonge au nord la zone que nous venons de décrire, par les comtés de Durham et de Northumberland, au sud par toute une série de comtés: les uns intérieurs comme Oxford, Berkshire, Wilts, Middlesex, Surrey; les autres côtiers comme Essex, Kent, les deux Sussex et Hampshire. Cette autre répartition de faible nigrescence est donc surtout orientale et méridionale. Et je fais constater, dès maintenant, qu'elle n'affecte aucun des comtés du Pays de Galles.

Le groupement de pigmentation qui vient ensuite, dans l'ordre de valeur croissante, se subdivise en îlots, dont les principaux sont composés: à l'ouest, sur la mer d'Irlande, par les comtés de Lancashire et de York West Riding; au centre, par les comtés terriens de Stafford, Leicester, Warwick (moins une portion centrale) et Worcester; dans le centre Est de l'Angleterre par les comtés de Cambridge et de Isle of Ely; enfin sur le canal de Bristol, par le comté de Somerset.

De ces indications, il résulterait que l'Angleterre, dans sa très grande partie, est un pays dans lequel l'indice de nigrescence ne montre que des valeurs très faibles. Il y a pourtant trois régions où nous voyons cet indice se relever. D'abord, dans le centre de l'Angleterre, un fort îlot, composé des comtés de Rutland, Peterborough, Huntingdon, Northamp-

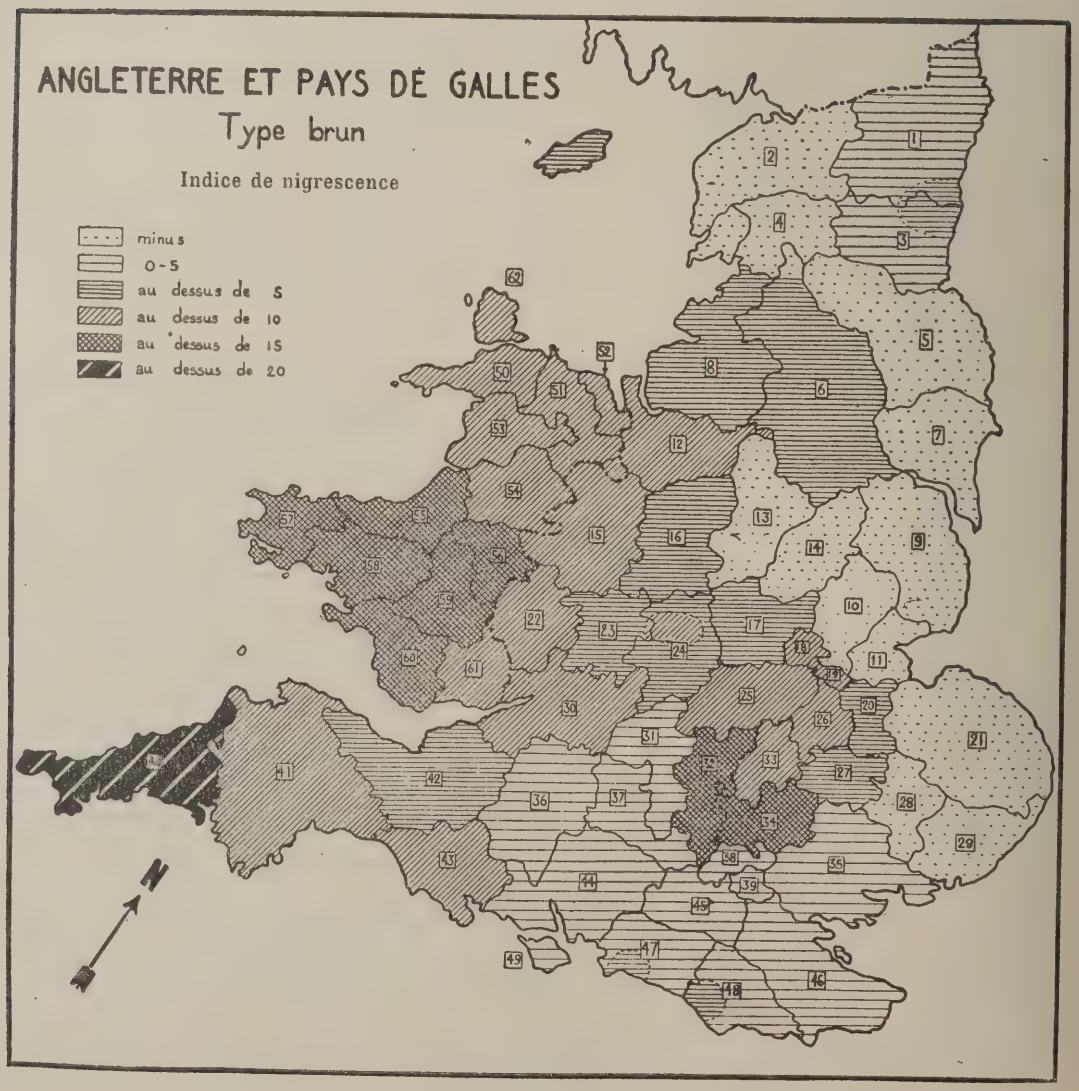
[1] Voir Topinard: *Carte de la répartition de la couleur des yeux et des cheveux en France*, « Revue d'Anthropologie », Paris, 1886, page 577.

Cartogramme N° 38.

ANGLETERRE ET PAYS DE GALLES.

Répartition géographique des individus de type brun, d'après Beddoe (1885). 13.088 observations.

Indice de nigrescence.



ton, Bedford, Hertford, Buckingham; ces deux derniers élèvent fortement la valeur de l'indice en le faisant passer du groupe au-dessus de 10 dans le groupe au-dessous de 15, l'autre qui touche le Pays de Galles et qui fait corps avec lui: Gloucester, Monmouth, Hereford, Salop, Cheshire. Enfin, dans le sud-ouest de l'Angleterre, trois comtés: Dorset, Devon et Cornwall. Ce dernier, de tous les comtés de l'Angleterre, a l'indice le plus élevé (au-dessus de 20). Quant au Pays de Galles, toutes ses subdivisions administratives possèdent des indices dont les valeurs sont relativement élevées, principalement dans sa partie méridionale. Si la carte de Beddoe donnait l'impression de faits définitifs, on pourrait se représenter, sur la base de l'indice de nigrescence, que, *grosso modo*, l'Angleterre et le Pays de Galles sont divisés en deux grandes parties géographiques: l'ouest, dès la hauteur de l'île d'Anglesey, fortement nigrescent; l'est, au contraire, et le nord, faiblement nigrescents.

L'enquête sur la coloration des yeux et des cheveux publiée dans le *Final Report* de 1883, a donné les résultats que nous consignons dans le tableau suivant:

Tableau N° 13.

POURCENTAGE DE LA COLORATION DES YEUX ET DES CHEVEUX EN ANGLETERRE ET DANS LE PAYS DE GALLES

(d'après le Rapport final du Comité anthropométrique page 276).

Comtés administratifs	Yeux clairs et cheveux blonds %	Yeux et cheveux foncés %	Yeux clairs et cheveux foncés %
Angleterre:			
Northumberland	+ 50	20–25	20–25
Durham	+ 50	25–30	15–20
Northumberland, Yorkshire, East Riding	45–50	20–25	20–25
West Riding of Yorkshire	45–50	25–30	15–20
Nottinghamshire	45–50	30–35	15–20
Cumberland et Westmorland	40–45	25–30	25–30
Lancashire	45–50	30–35	15–20
Cheshire	45–50	30–35	15–20
Derbyshire	45–50	–20	25–30
Staffordshire	45–50	30–35	15–20
Norfolk	40–45	25–30	20–25
Cambridge et Huntingdonshire	40–45	+ 35	10–15
Northamptonshire	40–45	25–30	20–25
Bedfordshire	35–40	+ 35	10–15
Kent	40–45	+ 35	10–15
Sussex	40–45	+ 35	15–20
Surrey	45–50	30–35	15–20
Oxfordshire et Buckingham	40–45	30–35	20–25
Hampshire	40–45	+ 35	15–20
Wiltshire	40–45	25–30	25–30
Gloucestershire (exceptionnel)	+ 50	30–35	10–15
Dorsetshire	40–45	30–35	20–25
Somersetshire	40–45	30–35	15–20
Devonshire	40–45	25–30	20–25
Cornouailles	40–45	30–35	15–20
Lincolnshire	35–40	+ 35	20–25
Leicester et Rutlandshire	30–35	+ 35	15–20
Warwickshire	35–40	+ 35	15–20
Worcestershire	35–40	+ 35	15–20
Londres	35–40	30–35	15–20
Berksh.re	35–40	+ 35	15–20
Hertfordshire et Middlesex	30–35	20–25	30 et +
Suffolk	30–35	30–35	20–25
Essex	30–35	+ 35	25–30
Shropshire	40–45	+ 35	15–20

Tableau N° 13 *(suite).*

POURCENTAGE DE LA COLORATION DES YEUX ET DES CHEVEUX EN ANGLETERRE ET DANS LE PAYS DE GALLES

(d'après le Rapport final du Comité anthropométrique, page 276).

Comtés administratifs	Yeux clairs et cheveux blonds %	Yeux et cheveux foncés %	Yeux clairs et cheveux foncés %
Pays de Galles :			
Denbigh et Flintshire	40–45	25–30	15–20
Carnarvon, Anglesey, Merioneth, Montgomery	40–45	+ 35	10–15
Cardiganshire	40–45	25–30	20–25
Brecknock et Radnor	40–45	30–35	20–25
Glamorgan, Carmarthen, Pembroke	40–45	20–25	20–25
Hereford et Monmouth	40–45	30–35	20–25

Ces documents ont permis d'établir diverses cartes. Nous en reproduisons trois.

La première (carte N° 39), qui montre la répartition des types clairs, c'est-à-dire des hommes dont les yeux sont clairs (bleus et gris) et les cheveux blonds (et roux) montre ce type surtout répandu dans les comtés de Northumberland et de Durham, puis au fond du canal de Bristol, dans le comté de Gloucester; ensuite, toujours dans l'ordre quantitatif, nous voyons un bloc puissant composé par huit comtés dans la région centre-nord et, au sud, nous y ajoutons le Surrey.

Si, maintenant, nous cherchons les régions habitées par les plus petits nombres d'individus appartenant à ce type clair, nous constatons qu'elles sont très clairsemées. Un comté central: Leicester; quatre comtés à l'est: Suffolk, Essex, Hertford, Middlesex. Après eux, dans l'ordre de valeur croissante, les trois Lincoln, Worcester, Warwick, Bedford et Berkshire. Le reste de l'Angleterre et tout le Pays de Galles appartiennent à une région où ce type des colorations compte le 40 à 45 % de la population.

Lorsque l'on considère de grands territoires, cette carte s'accorde, sur certains points, avec celle de Beddoe. Nous avons, en particulier, la confirmation que le pays de Galles ne renferme que très peu d'hommes ayant le type clair et que le sud-ouest de l'Angleterre est dans le même cas.

La carte suivante (carte N° 40) montre la répartition des yeux et des cheveux foncés.

La plus petite quantité d'individus présentant ce type se trouve dans le comté de Derby. Ensuite vient une masse géographique assez imposante composée des comtés septentrionaux de Northumberland, Cumberland, Durham, Westmorland, les trois York, puis des îlots parsemés dans toutes les directions: à l'est, Norfolk; au centre, le comté de Northampton, de Hertford de Wilts; dans le sud-ouest, le comté de Devon.

En pays gallois nous trouvons, ne possédant qu'un pourcentage peu élevé de ce type, les comtés de Pembroke, Carmarthen et de Glamorgan; puis, dans l'ordre croissant, celui de Cardigan et le comté de Denbigh. Tout le reste de l'Angleterre et du Pays de Galles possède une quantité d'individus à yeux et à cheveux foncés dont le pourcentage dépasse 30 %.

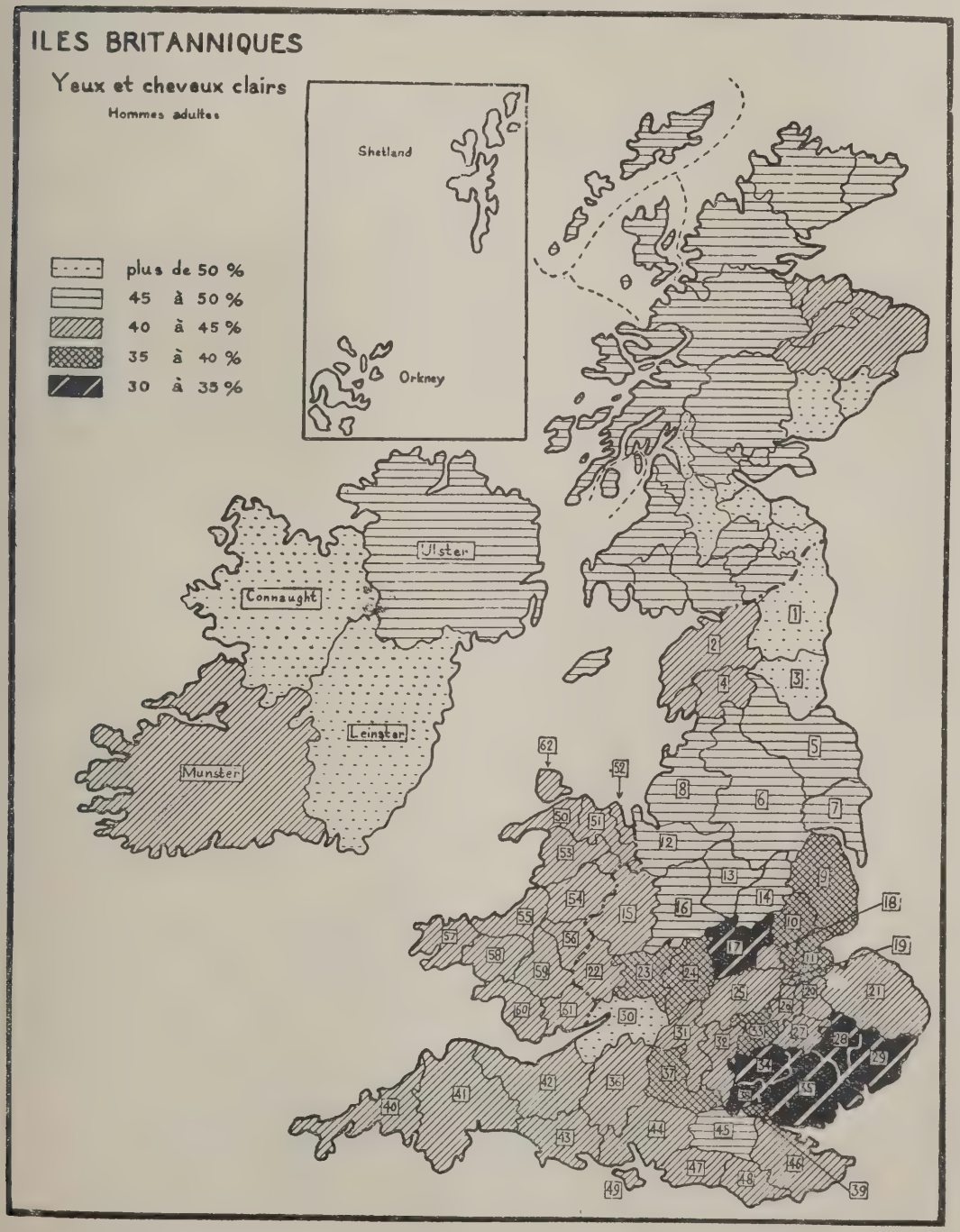
La troisième carte (carte N° 41) établit la répartition des individus chez qui les yeux sont clairs et les cheveux foncés. Les comtés qui renferment le plus grand nombre de telles personnes sont d'abord celui de Hertford puis, dans le sud, ceux de Wilts et d'Essex; dans le centre, le comté de Derby et, au nord, les deux comtés de Cumberland et de Westmorland. Ceux qui en ont le moins composent trois îlots en Angleterre, le comté de Kent, celui de Gloucester et enfin le groupe des quatre comtés: Bedford, Huntingdon, Cambridge, Isle of Ely.

Dans le Pays de Galles les comtés renfermant le minimum de ce type humain sont ceux du nord-ouest: Montgomery, Merioneth, Carnarvon et l'île d'Anglesey.

Cartogramme Nº 39.

ILES BRITANNIQUES.

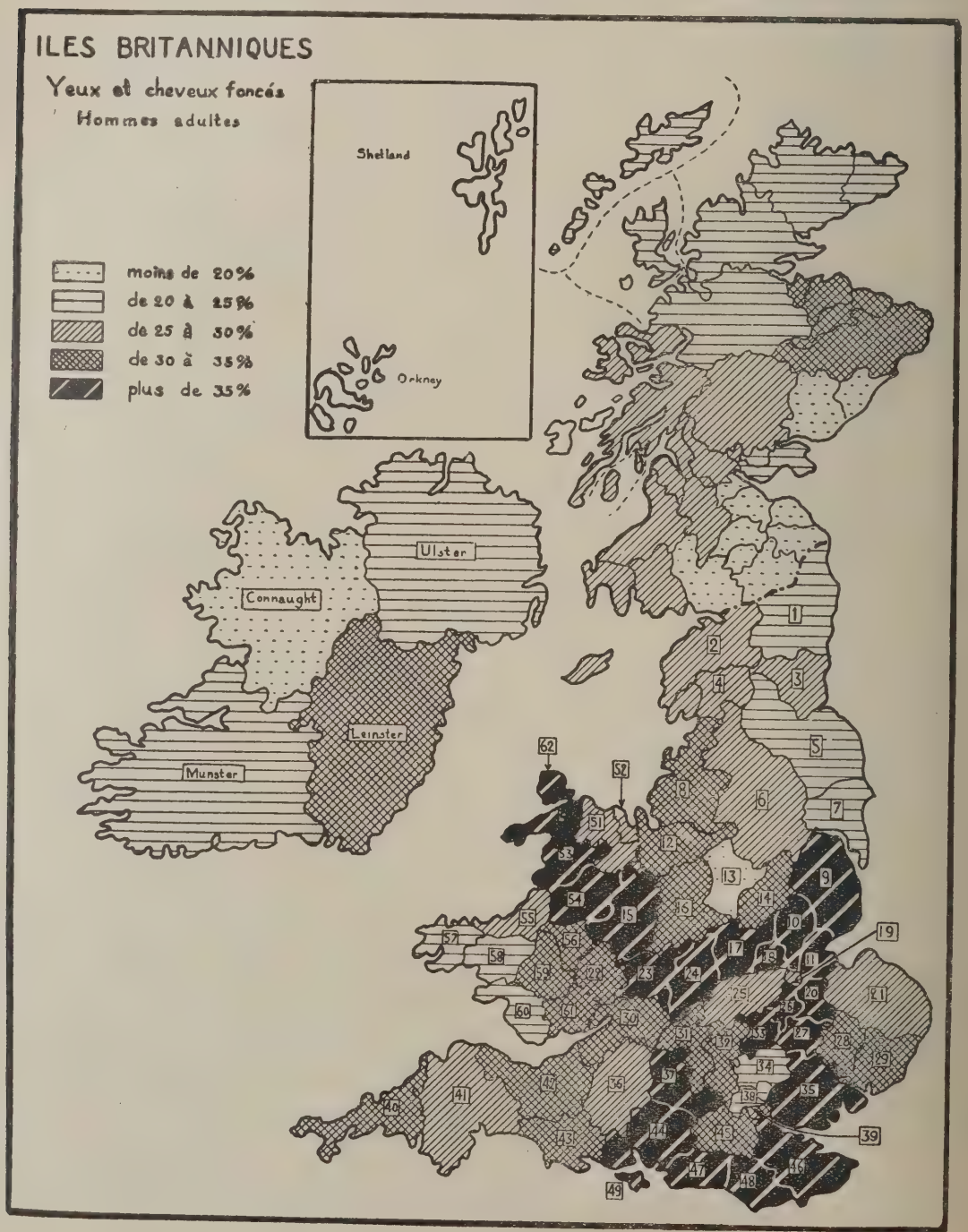
Répartition géographique des individus (hommes adultes) à yeux clairs et cheveux clairs (yeux bleus et gris, cheveux brun clair et roux).



Cartogramme N° 40

ILES BRITANNIQUES.

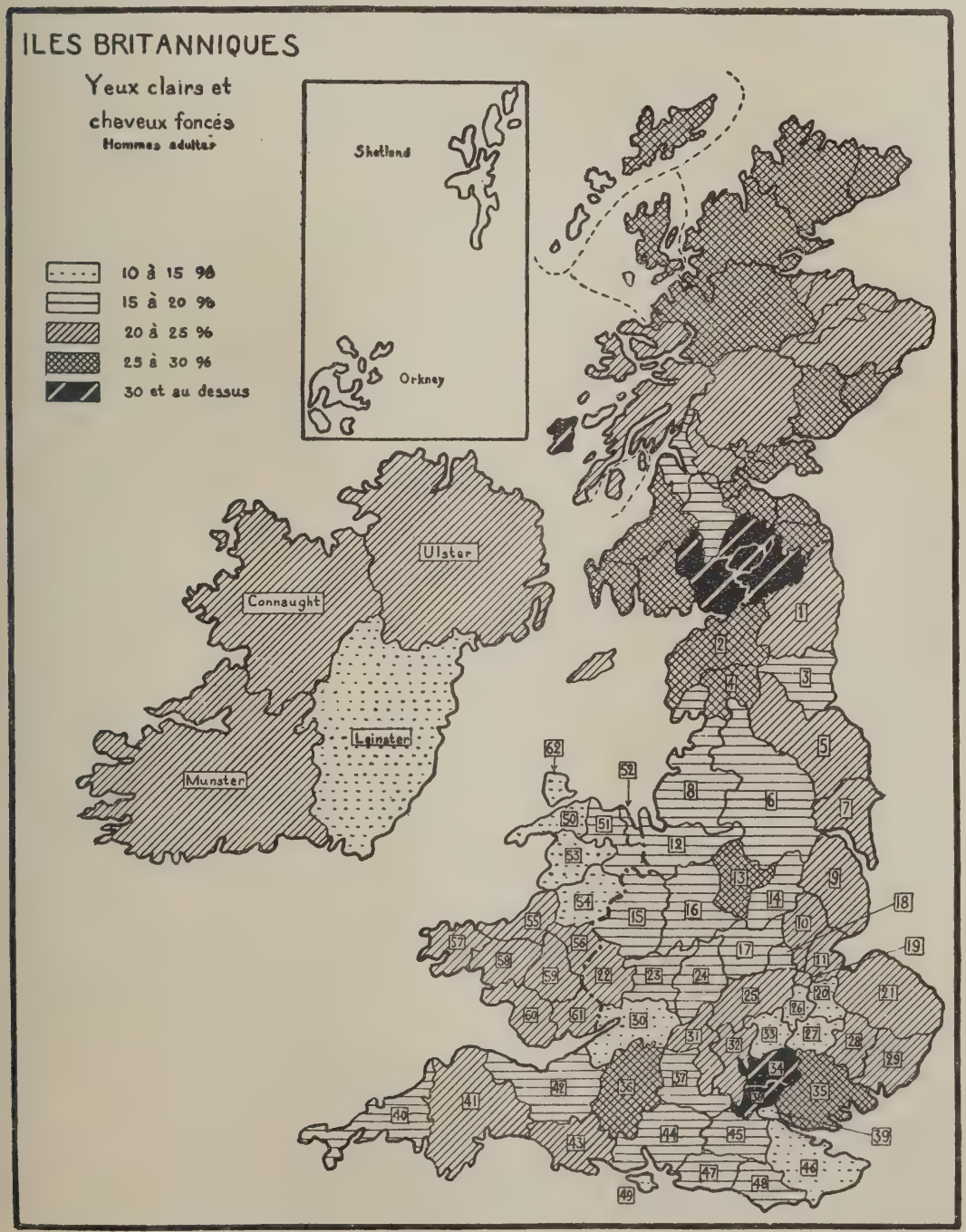
Répartition géographique des individus (hommes adultes) à yeux et cheveux foncés (yeux bruns et noirs, cheveux bruns, rouge foncé et noirs).



Cartogramme N° 41.

ILES BRITANNIQUES.

Répartition géographique des individus (hommes adultes) à yeux clairs et à cheveux foncés (yeux bleus et gris, cheveux brun foncé et noirs). (Comité anthropométrique.)



L'examen de la couleur des yeux et des cheveux dans les Iles Britanniques n'est pas une chose facile. Nous avons essayé de grouper, d'après le Rapport final du Comité anthropométrique, les types principaux de coloration des cheveux en tenant compte surtout des cheveux clairs et des cheveux foncés (tableau N° 14).

Tableau N° 14.

COLORATION DES CHEVEUX EN ANGLETERRE ET DANS LE PAYS DE GALLES
D'APRÈS LE COMTE RENDU FINAL
DE L'ASSOCIATION BRITANNIQUE POUR L'AVANCEMENT DES SCIENCES, 1882, page 262.

Comtés	Cheveux très blonds, blonds, brun clair, bruns %	Cheveux bruns, brun foncé et noirs %	Cheveux dorés, rouges, rouge foncé %
Angleterre :			
Yorkshire, N. et E. Ridings	43,4	44,3	5,9
Northumberland	44,–	44,3	7,7
Cumberland et Westmorland	41,4	54,2	1,5
Lincolnshire	35,6	56,5	5,1
Norfolk	44,–	48,5	3,7
Essex	27,–	62,3	5,–
Cornouailles	42,–	51,1	2,4
Staffordshire	45,1	48,4	2,6
Derbyshire	48,3	46,1	4,5
Suffolk	32,4	55,1	5,6
Durham	50,3	43,2	6,5
Berkshire	41,–	53,–	1,2
Kent	43,–	52,6	1,1
Lancashire	46,6	49,3	2,8
Hampshire	41,–	53,1	2,–
Nottinghamshire	45,6	50,3	3,6
Leicester et Rutland	35,6	60,7	0,6
Northamptonshire	44,–	50,1	2,6
Sussex	35,7	54,2	6,2
Worcestershire	33,1	62,1	3,6
Warwickshire	40,3	55,5	2,8
Bedfordshire	35,6	57,5	2,8
Devonshire	46,2	48,8	3,3
Dorsetshire	36,9	55,8	2,4
Yorkshire, W. Riding	43,6	48,8	6,6
London	36,8	49,5	4,4
Cambridge et Huntingdon	39,9	55,9	3,5
Oxfordshire et Buckingham	41,6	55,9	0,8
Cheshire	43,2	48,2	5,7
Surrey (sans Londres)	46,4	49,9	2,1
Hereford et Monmouth	42,7	51,4	2,–
Wiltshire	42,8	54 6	1,3
Shropshire	40,8	52,4	4,8
Gloucestershire (avec Bristol)	51,7	44,5	2,2
Somersetshire	42,3	47,7	5,6
Hertfordshire et Middlesex (sans Londres)	29,8	60,1	2,0
Pays de Galles :			
Flint et Denbigh	34,8	45,2	11,6
Carnarvon, Anglesey, Merioneth et Montgomery	35,9	53,9	51,
Cardigan	34,6	50,9	14,5
Brecknock et Radnor	42,–	53,6	2,9
Glamorgan, Carmarthen, Pembroke	46,–	42,–	4.–

Si l'on examine la répartition géographique des types les plus foncés, nous voyons figurer, parmi les régions présentant des taux dépassant 55 %, les comtés suivants: Lincoln, Essex, Suffolk, Leicester et Rutland, Worcestershire, Warwickshire, Bedfordshire Dorset, Cambridge et Huntingdon, Oxford et Buckingham, Hertford et Middlesex, c'est-à-dire, *grosso modo*, toute la masse centrale de l'Angleterre. Aucun des comtés du Pays de Galles ne présente des pourcentages aussi élevés.

Pour ce dernier pays, nous avons utilisé, dans le tableau suivant (tableau N° 15), les données de Fleure et James adaptées par Parsons. L'indice établi par ce dernier [1] montre, dans les régions galloises, de très grandes variations, allant de 43,75 (Newcastle) à 83,25 (Newquay). Mais le nombre des individus examinés est véritablement trop petit pour que nous insistions davantage.

Pour l'Angleterre elle-même, Parsons [2] a relevé les résultats des statistiques militaires datant du milieu du XIX^e siècle. A l'aide de ces documents, il a établi (voir la note au bas de cette page) les indices ci-dessous. Nous les inscrivons en allant du nord au sud:

Tableau N° 15.

Northumberland	30,6	Huntingdon	
Newcastle et Gateshead	33,3	Cambridge	26,3
Cumberland	30,–	Worcester	32,5
Durham	28,5	Oxford	34,–
Westmorland	30,–	Buckingham et Hertford	37,5
York, N. Riding	25,9	Essex	36,7
Lancashire	32,9	Bristol	32,–
York, W. Riding	34,–	Berkshire	34,–
York, E. Riding	25,9	Middlesex	26,1
Lincoln	29,–	Somerset	27,–
Derbyshire	28,5	Wiltshire	44,–
Nottingham	30,5	Surrey	32,7
Stafford	34,5	Kent	34,6
Leicester	33,2	Devon	35,8
Birmingham	35,–	Dorset	43,1
Warwick	41,–	Portsmouth	35,9
Northampton		Sussex	38,–
Rutland		Brighton	29,–
Bedford	37,9	Londres	33,3

Ce tableau nous montre des indices de valeurs très variables; par exemple, York-North Riding 25,9 et Wiltshire 44 (différence 18 unités).

Par des coupures quinaires, j'ai établi quatre groupes d'indices, et j'ai mis, à côté de chaque groupe, le nombre de comtés qui possèdent des indices dont les valeurs sont comprises dans ces coupures.

Indices	*Nombre de comtés*
de 25 à 30	12
de 31 à 35	14
de 36 à 40	6
de 40 à 45	3

[1] Indice de nigrescence selon Parsons:
Exemple:

Cheveux	rouges	5	
	blonds	26	
	bruns	42	
	brun foncé	24	24
	noirs	3	3
Yeux	clairs	76	
	foncés	24	24

51 : 2 = 25,5 (Indice)

[2] E. Ct. Parsons: *The Colour index of the British Isles*, « The Journal of the Anthropological Institute of Great Britain and Ireland », 1920, page 159.

Ce ne sont pas les comtés ayant des indices élevés qui sont les plus nombreux en Angleterre. Loin de là.

Si nous examinons rapidement la répartition géographique des indices de Parsons (cartogramme N° 42), nous voyons que, jusqu'à la hauteur des comtés de Stafford-Leicester, aucune circonscription géographique n'atteint l'indice 35. A partir de là, en allant vers le sud, nous entrons dans une zone de nigrescence formée par les comtés de Birmingham, Warwick, Northampton, Rutland, Bedford, Huntingdon. Plus au sud, on trouve un îlot assez fortement nigrescent, formant comme une bande entre le fond du canal de Bristol et l'Essex. Les autres masses ayant des indices élevés sont disséminées: l'une dans le Sussex, les autres dans les comtés du Wiltshire, de Dorset et de Cornwall.

Si l'on se reporte à la carte de Beddoe, on s'aperçoit que, sur certains points, les deux cartes s'accordent, Le nord de l'Angleterre, ici, comme chez Beddoe, est peu marqué de nigrescence. Le centre de l'Angleterre est, au contraire, caractérisé dans les deux cas par des indices élevés. Il en est de même dans les Cornouailles. Par contre, il y a, en certains lieux, entre les résultats de ces deux auteurs, des oppositions très nettes. Le comté de Wiltshire qui, chez Beddoe, est très peu nigrescent, le devient considérablement dans la série de Parsons. Le comté de Warwick montre des indices très différents selon que l'on s'adresse à l'une ou à l'autre des cartes [1]. Avec de tels documents on voit déjà qu'il sera très difficile de tenter un rapport entre l'état de la pigmentation de telle ou telle population de l'Angleterre et du Pays de Galles, et son taux plus ou moins élevé de mortalité par cancer.

Si déjà nous essayons un rapprochement entre la répartition du type brun selon Beddoe et le taux de mortalité, nous constatons que les zones de l'Angleterre et du Pays de Galles qui possèdent les indices de nigrescence les plus élevés, semblent être en même temps fortement touchés par le cancer. Que l'on examine comparativement les cartogrammes N°s 38 et 42, on s'apercevra qu'il existe, à l'occident des Iles Britanniques, un domaine comprenant le Pays de Galles et l'ouest de l'Angleterre, où les indices de nigrescence sont tous au-dessus de 10 ou de 15.

Sur la carte de la répartition géographique de la mortalité, cette zone est une des plus riches en cancer. Le comté de Cornouailles est marqué, sur les deux cartes, par les couleurs indiquant les taux les plus élevés. Dans la région centre-ouest de l'Angleterre, les comtés de Rutland, Northampton, Peterborough, Huntingdon, Bedford, Buckingham, Hertford composent un groupement homogène quant à ses qualités de nigrescence et tous ils appartiennent à des taux de mortalité élevés. Nous n'osons pas porter plus loin nos comparaisons, nous avons dit pourquoi. Si l'enquête de Beddoe est intéressante du point de vue purement ethnologique, parce qu'au moment où elle a été publiée, elle était le seul document important de cette sorte permettant d'avoir une idée de la pigmentation dans les Iles Britanniques, elle est nettement insuffisante pour les recherches que nous entreprenons aujourd'hui.

Les cartes obtenues par les enquêtes du Comité anthropométrique permettent-elles aussi quelques comparaisons ? La répartition des types clairs (yeux clairs et cheveux clairs) montre que les zones les plus cancéreuses de l'Angleterre et du Pays de Galles sont habitées par des individus figurant dans la statistique des types clairs pour 40 et 45 % environ (groupe cancéreux de l'ouest le plus homogène). Le second groupe cancéreux est plus hétérogène quant aux quantités de types clairs qu'il renferme.

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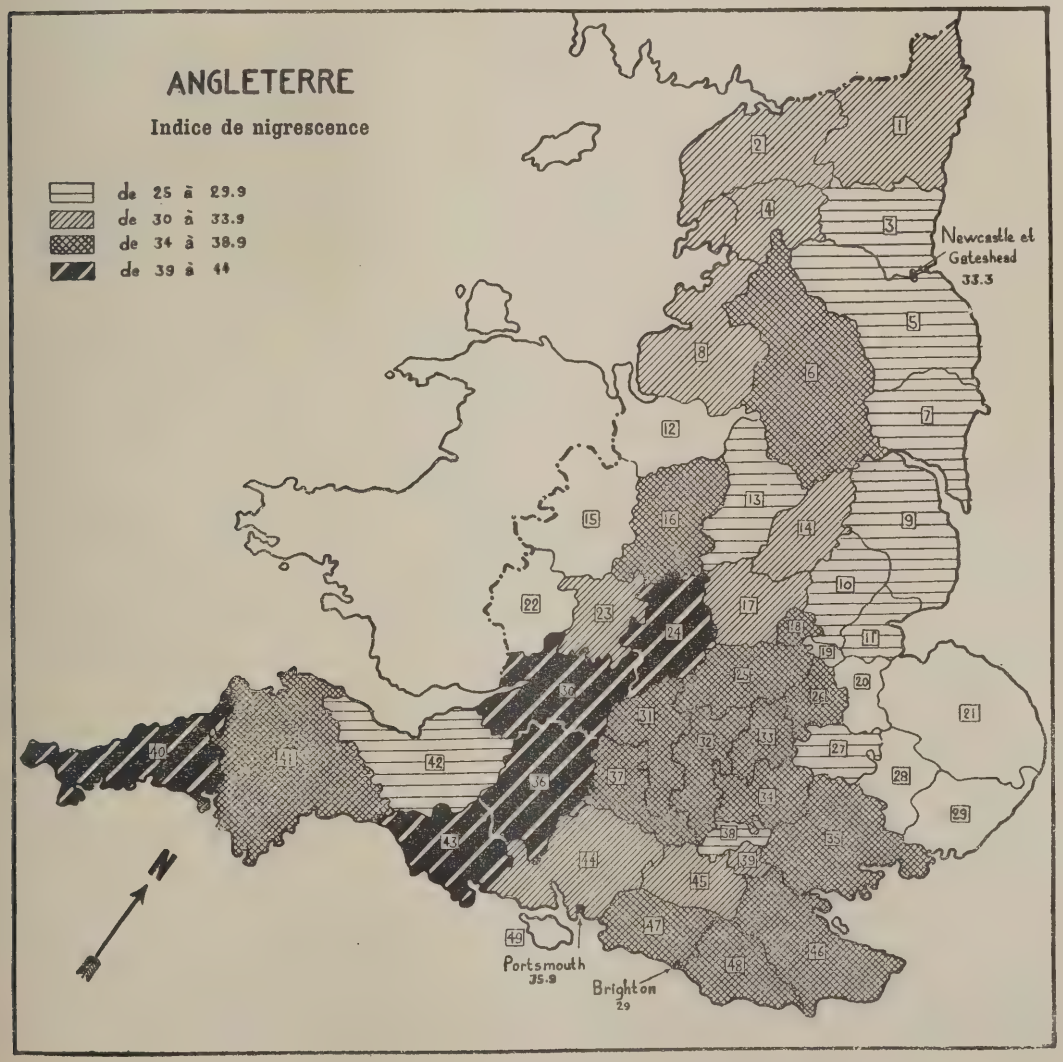
[1] Ne ressort-il pas de ces observations qu'une enquête sur la couleur des yeux et des cheveux s'impose encore péremptoirement en Angleterre ?

Cartogramme Nº 42.

ANGLETERRE.

Carte des indices de nigrescence établie par Parsons, au moyen des pourcentages publiés dans « Hue and Cry » (v. PARSONS: *The colour index of the British Isles: Journal of the Royal Anthropological Institute of Great Britain and Ireland, 1920, page 159).*



5. Essai de comparaison entre la taille et le cancer.

Nous inscrivons à côté des valeurs de la stature moyenne, rangées selon l'ordre croissant, les taux de mortalité de chacun des comtés.

Tableau N° 16.

Comtés	Taille moyenne	Taux de mortalité par cancer	Comtés	Taille moyenne	Taux de mortalité par cancer
Hertford . .	1,684	42,57	Rutland . .	1,709	50,78
Middlesex . .	1,684	42,52	Nottingham .	1,712	22,56
Shropshire . .	1,685	43,51	Lancashire .	1,715	14,91
Somerset . .	1,685	34,59	Kent	1,718	40,08
Gloucester . .	1,685	18,88	Berks . . .	1,718	31,71
Wiltshire . .	1,686	41,99	Suffolk East .	1,720	30,03
Hereford . .	1,688	39,52	Suffolk West	1,720	50,—
Monmouth .	1,688	31,02	Durham . .	1,720	23,35
Surrey . . .	1,689	33,38	Derby . . .	1,723	30,01
Cheshire . .	1,690	26,69	Stafford. . .	1,724	21,89
Oxford . . .	1,696	32,76	Cornouailles .	1,726	44,70
Buckingham .	1,696	41,97	Essex. . . .	1,727	27,17
Cambridge .	1,696	46,86	Norfolk . .	1,728	30,16
Huntingdon .	1,696	48,70	Lincoln (Parts of Holland)	1,732	49,52
Dorset . . .	1,702	41,90	Lincoln (Parts of Kesteven)	1,732	42,49
York, West Riding . . .	1,702	18,75	Lincoln (Parts of Lindsey)	1,732	26,67
Bedford . .	1,704	43,90	Cumberland .	1,737	35,46
Devon . . .	1,704	26,44	Westmorland	1,737	44,39
Warwick . .	1,707	10,36	Northumberl.	1,743	21,62
Sussex East .	1,709	21,55	York, North Riding . .	1,754	18,37
» West .	1,709	43,10	York, East Riding . . .	1,754	30,93
Northampton	1,709	32,13			
Leicester . .	1,709	21,18			

Dans ce tableau, j'ai fait des groupements de tailles un peu arbitraires. Alors que certains comtés sont subdivisés pour ce qui regarde le taux du cancer (ceux de Suffolk, Sussex, Lincoln, etc.), ils ne le sont pas pour ce qui regarde la valeur de la stature. J'ai donc répété pour chaque subdivision la taille que je connaissais comme représentant celle du comté tout entier.

Je dois ajouter que ces comtés subdivisés présentent à mes yeux, pour ce qui touche à leurs taux de cancer, des faits bien curieux. Celui de Sussex montre les valeurs 21,55 et 43,10; Suffolk 30,03 et 50,00, le comté de Lincoln 26,67 et 49,52. Je me demande, devant de telles variations de taux cancéreux, si j'ai eu le droit d'appliquer à chacune de ces subdivisions de comtés la taille de l'ensemble? Je le crois d'autant moins que, si pour les subdivisions du comté de Lincoln, j'ai affaire à des populations numériquement très différentes, il n'en est pas de même partout [1]. Par exemple, dans le comté de

[1] Les variations constatées ci-dessus montrent aussi à quel point des enquêtes plus précises s'imposent en Angleterre. Pourquoi ces taux de mortalité si différents dans les subdivisions d'un même comté ? Sont-ils dus à des conditions mésologiques créées par des états physiques et biologiques très différents ? Evidemment le procédé que j'ai employé — à défaut de documentation meilleure — de donner aux subdivisions d'un comté les caractères — ici la taille — de l'un d'entre eux, paraît plus arbitraire encore, lorsqu'on constate les variations des taux cancéreux à la surface d'une circonscription géographique dont l'étendue n'est pas toujours considérable.

York, les subdivisions administratives et les taux de mortalité se présentent ainsi:

	Population âgée de 45 ans au moins	*Taux de mortalité*
York, East Riding	113.234	18,37
York, West Riding	793.007	18,75
York, North Riding.	114.506	30,93

East et North Riding ont des populations d'égales valeurs numériques. Leurs taux de mortalité par cancer sont très différents. Si ces deux statistiques ont été bien établies en tant qu'opération médicale et mathématique il faudra expliquer ces différences.

On comprend combien de telles régions peuvent devenir intéressantes pour nos recherches et la nécessité impérieuse de résoudre de tels problèmes. C'est en étudiant de pareils îlots à caractères disparates que nous avons le plus de chances de pénétrer dans l'étiologie du cancer.

Pour ce qui concerne l'Angleterre, j'ai d'abord examiné les deux extrémités de la colonne des tailles et j'obtiens les résultats suivants:

	Tailles	*Taux de mortalité par cancer*
Les 10 comtés à taille minimum	1m.6864	35,46
Les 10 comtés à taille maximum	1m.7376	32,65

Il semblerait que les Anglais dont la stature est la plus élevée ont plus de chances d'échapper au cancer que les autres.

Puis, j'ai établi les quatre groupements de stature que voici:

Tailles	*Taux de mortalité par cancer*
de 1m.684 à 1m.695	35,46
1m.696 1m.709	34,33
1m.710 1m.729	30,55
1m.730 1m.754	33,68

Le groupe le plus favorisé, vis-à-vis du cancer, c'est-à-dire celui qui connaîtrait le moins cette maladie, serait le groupe dont la taille est comprise entre 1 m. 71 et 1 m. 73. Plus petit ou plus grand, l'Anglais serait plus atteint par le fléau. Evidemment, ce n'est pas là une conclusion capable de stabilité. Ce petit tableau fait constater simplement qu'en Angleterre les très grands et les moins grands fournissent, plus que les « moyens », des taux cancéreux élevés à la statistique. Mais que valent les enquêtes faites sur la stature ? Elles sont faibles, numériquement.

Pour le Pays de Galles comme pour l'Angleterre nous avons ordonné les statures selon l'ordre croissant de leur valeur et nous mettons à côté les taux de mortalité par cancer.

Tableau N° 17.

Comtés	Taille moyenne	Taux de mortalité
Carmarthen	1,689	38,36
Pembroke	1,689	42,46
Glamorgan.	1,689	21,71
Brecknock	1,692	34,93
Radnor	1,692	35,09
Cardigan	1,693	46,03
Carnarvon	1,699	48,22
Anglesey	1,699	48,14
Merioneth	1,699	53,33
Montgomery	1,699	53,52
Flint	1,703	41,62
Denbigh	1,703	44,92

En prenant les cinq premiers termes de ce tableau et les cinq derniers, et en en calculant les moyennes, je constate que les comtés qui ont la taille la plus élevée sont en même temps ceux qui ont les plus forts taux cancéreux :

	Taux
Groupe de moins grande taille	34,51
Groupe de plus grande taille	48,32

Mais nous n'avons avec la stature qu'un seul élément de caractérisation ethnique. Or, nous savons qu'à taille égale, ou à peu près, les hommes peuvent constituer, par leurs autres caractères morphologiques, des ensembles ethniques très différents.

6. Essai de comparaison entre l'indice céphalique et le cancer.

Avec les maigres documents fournis par l'indice céphalique, nous ne pouvons guère envisager que quelques rapprochements entre ce caractère et le taux de mortalité. De l'îlot fortement cancéreux de l'est, West-Suffolk, Cambridge, Isle of Ely, Huntingdon, nous n'avons que de bien misérables renseignements. Sous ce terme extrêmement vague de « centre de l'Angleterre », nous trouvons des indices moyens de 77 à 78. L'expansion territoriale fortement cancéreuse qui entoure cet îlot à maximum (sauf le comté d'Essex), nous est inconnue quant à ses caractères morphologiques craniens (indice Chiltern Hills = 77,7). A l'autre extrêmité de l'échelle des taux de mortalité par cancer, si Warwick ne nous apprend rien, le Lancashire semble avoir l'indice 77,5. Je dis: semble, à cause du très petit nombre d'individus examinés. Et les comtés voisins, beaucoup plus riches de cancer, paraissent avoir le même indice céphalique.

Les comtés de Stafford et de Cheshire, qui ont des taux moyens de mortalité (20 à 29,9), font-ils partie de l'« Est de l'Angleterre » (Beddoe et Venn), où nous voyons un très petit nombre de personnes présenter l'indice moyen 78,9 ?

L'indice céphalique le plus faible des tableaux de Beddoe est celui du comté de Wiltshire (76,8). Ce comté est fortement touché par le cancer. Mais il n'arrive pas au maximum montré par les comtés les plus atteints.

Aurions-nous le droit, après un tel rapprochement, de dire que les comtés les plus cancéreux sont en même temps les plus dolichocéphales ? Pas le moins du monde. L'anthropologie est ici trop peu documentée.

D'autre part, l'indice céphalique le plus élevé est celui de Flamborough (Yorkshire) 79,3. Et nous sommes là dans une zone faiblement touchée par le cancer. Malgré que cette série anthropologique est plus importante que celle du Wiltshire, nous n'oserons pas dire non plus qu'ici nous démontrons un rapport entre un indice céphalique relativement élevé et un faible taux cancéreux.

En somme, ce que nous connaissons des caractères céphaliques de l'Angleterre ne nous permet pas d'établir des comparaisons démonstratives.

Le Pays de Galles, avons-nous dit, est un peu mieux étudié. Mais il ne l'est certainement pas assez pour nos besoins. Nous y connaissons un comté dont le taux de mortalité est relativement faible: Glamorgan. Nous ne connaissons pas son indice céphalique. Le comté qui le touche à l'est, Monmouth, a un indice céphalique de 79. Serait-ce qu'on peut étendre à Glamorgan l'indice céphalique de Monmouth ? C'est possible, mais le cancer est plus abondant à Monmouth que chez son voisin de l'ouest. On voit la série de difficultés que nous rencontrons.

Le Pays de Galles, dans son ensemble, est très fortement touché par le cancer, puisque la moyenne de son taux de mortalité est 42,45. Sur 49 comtés anglais, 14 seulement atteignent et dépassent ce chiffre. D'autre part, le Pays de Galles présente une uniformité très remarquable de la valeur de son indice céphalique. Beddoe indiquait pour ses habitants l'indice moyen 78; Venn 78,7. Une série de mensurations dont j'ai sous les yeux les résultats donne, comme indice moyen, 77,69 (indice maximum 79,5, minimun 76). L'indice le plus élevé provient de la région occidentale du comté de Cardigan. Dans son ensemble, ce comté est très cancéreux, mais nous ne savons pas si, dans le détail, sa partie occidentale échappe davantage au fléau que le reste du territoire. S'il était possible d'utiliser des indices moyens pour représenter avec quelque fidélité le caractère céphalique des Anglais et des Gallois, nous dirions que l'Angleterre, dans son ensemble, a des crânes relativement moins allongés que ceux du Pays de Galles. Nous ajouterions que son taux cancéreux est aussi moins élevé que celui du Pays de Galles. Mais une telle conclusion serait, au sujet d'un travail pour lequel il faut beaucoup de minutie, pour lequel il faut encore beaucoup de renseignements pour pouvoir pénétrer dans les détails, de la bien mauvaise besogne scientifique.

Je voudrais, en terminant ce passage, citer une observation de Beddoe. Il constate que les parties septentrionales de l'Angleterre accusent des formes de têtes plus larges que les parties méridionales et moyennes du royaume. Le type de l'âge du bronze (c'est un type à crâne arrondi) est répandu, dit-il, dans les parties montagneuses du nord.

Avons-nous le droit d'étendre à tous les comtés du nord une telle supposition — car ce n'est guère plus que cela ?...

D'une façon générale le nord de l'Angleterre est moins cancéreux que le sud. Pouvons-nous croire que des recherches anthropologiques, systématiquement conduites, mèneraient à confirmer l'opinion de Beddoe ? Ce serait sans doute fort intéressant, mais les savants anglais entreprendront-ils cette enquête ? Elle apparaît pour le point de vue qui nous occupe ici un important document.

7. Essai de comparaison entre les caractères de la pigmentation et le cancer.

Après avoir constaté les faibles lueurs apportées à la question qui nous préoccupe par les connaissances insuffisantes que nous avons de la taille et de l'indice céphalique en Angleterre et dans le Pays de Galles, j'ai tenté quelques essais de même nature en m'aidant de la coloration des yeux et des cheveux.

J'ai cherché s'il existait un rapport entre les taux de mortalité par cancer et les caractères — très insuffisants — de pigmentation, que nous possédons. Pour cela, j'ai pris, d'un côté, les 10 comtés les moins atteints par le cancer et de l'autre les 10 comtés les plus atteints et j'ai mis en regard les chiffres de la stature (ceux qui existent), les états de pigmentation selon le rapport du Comité anthropométrique, les indices de Parsons et les notations de Beddoe pour la répartition du type brun. Les résultats sont plutôt décevants. Exemple:

	Taille	D'après le « Final Report »		Indices de Parsons
		Les plus blonds	Les plus bruns	
Les 10 comtés les moins cancéreux	1 m. 716	42,2	50,9	34,27
Les 10 comtés les plus cancéreux	1 m. 715	37,7	55,8	33,1

Les statures sont les mêmes dans les deux cas. Contrairement à ce qu'on pourrait croire, les comtés les plus atteints par le cancer renferment un peu moins de blonds et un peu plus de bruns que les comtés les moins atteints. L'indice de nigrescence de Parsons est aussi un peu plus faible chez ces derniers.

En examinant, au surplus, les comtés selon les indices de nigrescence de Beddoe, je trouve, pour le premier groupe, un total de 58 et, pour le deuxième groupe, un total de 70. Mais j'ai, dans ce dernier groupe, trois termes de « minus » tandis que je n'en ai qu'un dans le premier groupe. De ces comparaisons, il résulterait que les comtés les plus cancéreux sont habités par des hommes qui ont une taille égale à celle des individus vivant dans les comtés les moins cancéreux, lesquels individus sont, en même temps, moins souvent blonds, plus souvent bruns (réserves cependant pour ce qu'indique l'indice de Parsons).

Mais pouvons-nous, avec de tels documents, admettre de telles conclusions ?

Ce qui ressort à l'évidence de tous ces essais, c'est l'impossibilité dans laquelle nous sommes aujourd'hui de travailler avec fruit. Nous croyons saisir une piste, brusquement nous nous apercevons que le sol manque sous nos pas. Il faut le déclarer nettement, les enquêtes anthropologiques en Angleterre sont trop insuffisantes pour que nous puissions les utiliser avec sagesse. Il a manqué à ce pays un certain nombre de Beddoe, qui, se partageant la besogne, auraient dressé définitivement la physionomie ethnique de l'Angleterre. Un tel jour luira, sans doute. Si les recherches actuelles entreprises par la Commission du cancer de la Société des Nations pouvaient conduire à instaurer dans les divers Etats européens — et ailleurs aussi — des recherches anthropologiques plus étendues et mieux systématisées, le gros travail que nous avons engagé n'aura pas été vain. Le progrès marche à pas lents; le cancer, lui, va vite. Il serait désirable que le premier rattrappe le second.

Conclusions.

En Angleterre et dans le Pays de Galles le cancer est très inégalement répandu. Entre la valeur des taux extrêmes fournis par les subdivisions administratives on constate, aussi bien chez les hommes que chez les femmes, des différences qui vont du simple au triple. Dans les mêmes comtés, les deux sexes ne se comportent pas de la même manière vis-à-vis du cancer.

Une telle double constatation oblige fatalement à de nouvelles recherches. Scientifiquement, on ne peut se contenter d'enregistrer un fait sans essayer d'en pénétrer les causes.

La répartition géographique du cancer dans le royaume semble proposer deux régions plus cancéreuses que les autres. L'une à l'ouest dans le Pays de Galles, l'autre à l'est en Angleterre. Entre deux, le centre du royaume paraît être la région la plus favorisée vis-à-vis du fléau cancéreux. Les deux groupements géographiques les plus cancéreux constatés ci-dessus se retrouvent aussi bien dans les cartes où les sexes sont séparés que dans celles où ils sont réunis.

Les caractères anthropologiques de l'Angleterre et du Pays de Galles nous sont malheureusement peu connus. Ils sont tout à fait insuffisants pour une recherche du genre de celle que nous entreprenons. Les lignes qui vont suivre ne représenteront donc que des présomptions.

Les comparaisons de la stature et du cancer en Angleterre montrent que les individus les moins grands et les individus les plus grands sont ceux qui sont les plus atteints par la

maladie. Le taux minimum de mortalité se remarque dans le groupe dont la stature est comprise entre 1 m. 710 et 1 m. 729. Dans le Pays de Galles, les habitants les plus grands semblent beaucoup plus touchés par le cancer que ceux qui n'atteignent pas aux plus hautes statures. Mais est-on bien sûr d'un tel résultat ? Il y a si peu de différences entre les groupes de tailles — un centimètre !

D'autre part, nous constatons que des comtés à tailles relativement moins hautes, comme celui de Pembroke, présentent néanmoins un taux élevé de mortalité. Mais on sait que la taille seule ne nous permet pas d'établir une caractérisation ethnique suffisante.

Les formes craniennes des habitants de l'Angleterre et du Pays de Galles nous sont par trop inconnues pour que nous puissions nous baser sur l'indice céphalique des comtés aux fins d'établir entre cet indice, la taille et le cancer un rapport sérieux. Certains résultats semblent nous conduire vers une direction déterminée dont, un instant plus tard, nous sommes détournés par d'autres résultats venant de la même source.

Le Pays de Galles, dans son ensemble, paraît posséder un indice céphalique plus dolichocéphale que l'Angleterre. Or, c'est une région fortement touchée par le cancer. D'un autre côté, le Pays de Galles est une région de façon générale plus richement pigmentée que l'Angleterre dans son ensemble. Comment comprendre dans un tel groupement géographique cette association d'une haute stature d'un crâne plus nettement dolichocéphale avec des cheveux plus souvent bruns ?

L'étude de la pigmentation ne nous a pas conduits non plus à des résultats satisfaisants. Parmi les essais de comparaisons entre le cancer et le degré de pigmentation, les uns semblent indiquer que les populations où l'on compte le plus grand nombre de blonds — celles qui pourraient être de race nordique — ont leurs taux de mortalité par cancer les moins élevés; d'autres essais semblent indiquer le contraire.

Il faut absolument que nous sachions si les populations les plus blondes sont en même temps les plus dolichocéphales et les plus grandes.

Nous pensons qu'une étude particulièrement intéressante pour le but que nous envisageons serait celle des comtés subdivisés administrativement, où l'on a constaté de grandes variations dans les taux de mortalité par cancer.

Quelques-uns de ces comtés (les York par exemple) créent — par leur dislocation administrative — des îlots partiellement disparates quant aux taux de mortalité. De tels îlots seraient à examiner dans tous leurs détails — ce serait plus facile que dans de grandes circonscriptions — en envisageant tous les facteurs qui pourraient être susceptibles d'apporter une explication: facteurs ethniques et facteurs mésologiques.

Du point de vue statistique, il y aurait lieu de se préoccuper d'un fait que nous avons relevé au cours de ce travail, à savoir que les comtés qui n'ont qu'un nombre relativement petit d'habitants semblent avoir un taux relativement très élevé de cancer. Est-ce là l'effet d'une opération statistique ? Est-ce une réalité biologique ?

Le Pays de Galles serait particulièrement intéressant à étudier au double point de vue anthropologique et médical. Certaines indications semblent faire croire que cette région est relativement plus homogène, ethniquement, que le reste du royaume. Le cancer y semble aussi plus abondant. Peut-être sommes-nous là, en effet, de par la composition ethnique de la population, dans un milieu biologique plus favorable à la maladie qu'en Angleterre ? Dès lors, il faut en chercher les raisons.

Malgré les enquêtes anthropologiques les plus récentes, telles celles de Fleure et James, le Pays de Galles aussi est encore trop peu connu [1]. Les caractères ethniques de

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[1] Des enquêtes semblables devraient être entreprises sur tout le territoire des Iles Britanniques, mais, toutefois, à l'aide de séries numériquement plus importantes. Elles auraient vite fait d'atteindre les résultats que nous escomptons.

plusieurs comtés attendent leur premier descripteur. On a dit, se basant sur la couleur foncée des cheveux, et la forme du crâne dolichocéphale, que les populations galloises qui possèdent ces caractéristiques associées devaient être rattachées à la race méditerranéenne. Je ne le pense pas. Les Gallois sont de trop haute stature — en particulier — pour que nous les placions dans un tel cadre. Les régions centrales du Pays de Galles renferment des individus appartenant au type clair et leur crâne, en moyenne, serait mésaticéphale.

Ainsi, nous pressentons qu'il existe des répartitions ethniques plus ou moins bien délimitées, dans le Royaume-Uni. Ce sont les groupes ainsi décelés qu'il faudrait surtout pouvoir étudier au double point de vue qui nous conduit.

Les conclusions que nous apportons ici doivent être considérées surtout comme incitant à de nouvelles recherches: la seule constatation des variations observées dans l'espace anglo-gallois, quant aux taux de mortalité, nous ordonne d'en savoir davantage. La présence de plusieurs groupes ethniques sur le sol anglais permet aux suppositions que nous avons faites dans un travail précédent de conserver toute leur valeur, au moins jusqu'au jour où l'on aura démontré — ce qui s'appelle démontré — la cause réelle du cancer.

VI. COUP D'ŒIL GÉNÉRAL EN MANIÈRE DE RÉSUMÉ SUR LES RAPPORTS POSSIBLES EXISTANT ENTRE LA RACE ET LE CANCER EN FRANCE, EN SUISSE, DANS LES PAYS SCANDINAVES ET DANS LES ILES BRITANNIQUES

Par le professeur Eugène Pittard.

1. LA FRANCE

Généralités.

Au cours de toute son histoire — préhistorique et historique — la France a connu des invasions humaines.

Au point de vue de l'ethnogénie française, les plus importantes sont venues du nord et de l'est. Les unes ont apporté sur le territoire français des masses imposantes d'individus appartenant à la race nordique (kymrique ou germanique — *Homo europaeus*), s'installant principalement dans les départements du nord et du nord-est [1]; les autres masses, également nombreuses, peuplèrent surtout les régions montagneuses et constituèrent ce que nous appelons, après Broca, la race celtique (ou cévenole de Deniker) le type de l'*Homo alpinus*.

Une troisième race, importante également par sa masse numérique, occupe le sud de la France, des Pyrénées moyennes à la frontière italienne. C'est la race ibéro-insulaire de Deniker, la race méditerranéenne de Sergi, l'*Homo meridionalis*.

Ces races principales de la France ne sont pas les seules de l'ancienne Gaule. Mais nous n'avons pas, à l'égard des autres races, assez de documents comparatifs pour que nous nous occupions d'elles dans la présente étude dont le but est particulièrement limité.

On ne peut trouver nulle part en France une circonscription géographique où la race soit restée pure. Cette hétérogénéité provient soit du fait qu'en arrivant sur le sol français les groupes envahisseurs n'étaient déjà plus homogènes, soit du fait que depuis leur établissement définitif il y eut, entre les divers groupes ethniques, des mélanges.

Les caractéristiques morphologiques et descriptives nécessaires pour établir la diagnose de ces diverses races ont été établies par une pléiade d'anthropologistes au premier rang desquels il faut placer Broca, de Quatrefages, Topinard, Hamy, Collignon, Hervé, Lagneau, etc., les médecins qui utilisèrent les données des recrutements militaires; les démographes (Bertillon, Boudin, etc.).

Documents de statistiques médicales.

Les variations considérables que l'on observe dans les taux de mortalité par cancer selon les départements français nous font croire que les statistiques médicales départementales ne sont pas exactement comparables et il y a lieu de faire toutes les réserves nécessaires à cet égard.

Néanmoins, une partie des inconvénients résultant de cette inégalité de valeur scientifique s'atténue lorsque, après quelques éliminations, nous groupons un certain nombre de départements et que nous constituons des régions

[1] A l'époque historique nous connaissons l'arrivée sur le sol français d'un grand nombre de tribus d'origine germanique.

Documents anthropologiques.

La taille. — Pour faire voir d'un coup d'œil les différences les plus saillantes de la stature humaine en France, nous avons dressé, d'après Broca, Lagneau, Boudin, etc., les cartes d'exemptés par défaut de taille (cartogramme N° 1) et les répartitions des plus hautes tailles et des plus petites tailles (cartogramme N° 2). On voit immédiatement que la France est peuplée par des groupes ethniques différents dont plusieurs sont restés relativement rassemblés sur certains territoires. Les plus hautes tailles sont l'apanage des départements du nord, ceux que nous savons peuplés par des représentants de la race nordique.

L'indice céphalique. — Les divers départements français sont loin d'être comparables quant à leur documentation anthropologique (voir cartogramme N° 3). Si certains d'entre eux sont assez bien connus, d'autres n'ont apporté à la statistique anthropologique qu'un très petit nombre de renseignements. L'indice céphalique est incomparablement moins bien connu que la stature. Nous avons principalement utilisé les documents fournis par Collignon, Topinard, Hovelacque, Hervé et Deniker.

L'indice céphalique permet de délimiter certaines régions en France. C'est ainsi qu'un groupe important de départements du nord, ceux qui sont limitrophes de la Belgique et d'une partie du littoral, sont en majorité du type dolichocéphale.

Une seconde zone dolichocéphale est constituée au sud-ouest par la région périgourdine.

Une troisième comprend les départements pyrénéens et ceux du littoral de la Méditerranée.

Quant à la France brachycéphale, elle comprend toutes les parties montagneuses sauf les Pyrénées; et les massifs qui topographiquement sont les plus compacts, présentent les hommes aux indices céphaliques les plus élevés.

Cette agglomération brachycéphale est la plus homogène. Elle apparaît plus nettement sur les cartes que les autres groupements créés par les indices céphaliques.

Une première masse de ces brachycéphales se rencontre à l'est, de la Meurthe aux Hautes-Alpes; une seconde grande agglomération compose un massif ethnique important dans la partie centrale de la France (voir la carte N° 3).

La couleur des yeux et des cheveux. — Enquêtes dues surtout à Topinard. Les cartogrammes N^{os} 4 et 5 montrent une prédominance des types les plus blonds dans les départements du nord de la France et des plus bruns dans le sud, des rives de l'Atlantique (embouchure de la Gironde) à la frontière italienne.

Les cheveux les plus clairs sont l'apanage des hommes dont les yeux sont aussi les plus clairs. Une observation de même ordre s'adresse aux individus ayant les cheveux les plus foncés; ils associent à cette forte pigmentation capillaire des iris sombres.

C'est à l'aide de ces divers renseignements que les répartitions des diverses races françaises ont pu être dressées.

La répartition du taux de mortalité par cancer.

Le tableau N° 1, page 147, montre que ce taux est très différent selon les départements français, même en éliminant certains départements dont la statistique peut être sujette à caution. Les taux de mortalité par cancer maxima appartiennent presque tous aux départements septentrionaux: les taux minima (après quelques éliminations) aux départements méridionaux.

Le cartogramme N° 6 marque la répartition des taux cancéreux dans tous les départements; le cartogramme N° 7, pour plus de clarté, a été limité aux taux maxima et minima. A cause des statistiques discutables, il faut reporter les minima à la région qui va des Pyrénées-Orientales à la frontière italienne.

Existe-t-il une corrélation entre les taux divers de mortalité par cancer et les diverses races humaines ? — Tout d'abord, il faut remarquer que les taux de mortalité par cancer dans certains départements possédant des grandes villes et des centres hospitaliers importants ne dépassent pas — ou même n'atteignent pas — les taux de mortalité des départements les plus voisins qui pourraient tout naturellement envoyer leurs malades cancéreux dans ces centres hospitaliers. Par exemple, le taux de mortalité de Paris est inférieur à celui de la Seine-Inférieure et de la Somme. Nous avons cité plusieurs autres exemples de ce fait aux pages 150 et suivantes.

Il ne semble pas, au premier coup d'œil, que nous puissions établir une corrélation entre un type de stature donné et le taux de mortalité par cancer, quoique les petites statures, à première vue, paraissent présenter de plus faibles taux que les autres [1].

Mais un examen de la seule stature ou du seul indice céphalique n'est pas, nous l'avons dit maintes fois, une base suffisante pour nos comparaisons. Il faut leur associer les autres caractères qui composent, lorsqu'ils sont réunis, les types ethniques.

La carte de la répartition des taux de mortalité par cancer (carte N° 6) montre que les chiffres minima se rencontrent au sud de la France et les chiffres maxima surtout dans les départements du nord.

En associant les caractères de la taille, de l'indice céphalique et de la couleur des yeux et des cheveux, nous pouvons constituer en France des circonscriptions géographiques habitées par des hommes qui sont loin d'être semblables dans chacune de ces circonscriptions. C'est ainsi qu'un certain nombre de départements du nord renferment une majorité d'individus de haute stature, dont le crâne est dolichocéphale ou à tendance dolichocéphale, dont les yeux et les cheveux sont faiblement pigmentés. C'est le domaine en France de la race nordique indiquée ci-dessus.

Les taux de mortalité par cancer dans cette région sont les plus élevés de la France (voir les cartes N^{os} 7 et 8).

Depuis la région pyrénéenne jusqu'à la frontière italienne s'échelonnent des départements dont les habitants sont en majorité de petite stature. Ils associent à ce caractère un crâne également dolichocéphale, mais la pigmentation de ces hommes est foncée. Ces individus de petite stature, dolichocéphales et bruns, sont les représentants de la race méditerranéenne ou ibéro-insulaire.

Les départements qui sont les appartenances de cette race ont de faibles taux de mortalité par cancer. Entre ces deux groupements géographiques et ethniques s'étend, *grosso modo*, le domaine de la race celtique ou cévenole. Les hommes qui le peuplent sont de taille moyenne, leur crâne est brachycéphale, leurs yeux et leurs cheveux sont foncés. Dans ce domaine ethnique, les taux de mortalité par cancer sont un peu plus élevés que dans la zone méridionale. Mais ils le sont incomparablement moins que dans la zone habitée par les représentants de l'*Homo nordicus*.

Ainsi s'établirait en France une hiérarchie des taux de mortalité par cancer. Cette maladie atteindrait beaucoup plus les représentants de la race nordique, beaucoup moins ceux de la race celtique, les moins éprouvés seraient les représentants de la race méditerranéenne.

Ce sont là des résultats globaux, obtenus avec des documents imparfaits. Ils méritent cependant toute notre attention. Aucun homme de science, aucun sociologue, aucun hygiéniste ne peut se désintéresser d'une telle conclusion.

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[1] Il faut souligner tout de même cette intéressante constatation. Nous savons que les populations appartenant à la race méditerranéenne sont de petite stature. Celles qui appartiennent à la race cévenole sont aussi de taille inférieure à la taille des populations nordiques. Ces dernières sont les plus atteintes par le cancer.

2. LA SUISSE.

Généralités.

La Suisse, dont la statistique médicale paraît excellente — exception faite pour quelques régions alpines (comme le Valais) —, serait un des pays les plus intéressants à étudier du point de vue qui nous occupe ici. Malheureusement, si les statistiques médicales de la Suisse sont bonnes, les documents anthropologiques de ce pays sont tout à fait insuffisants [1]. Quelques cantons seulement nous montrent leur physionomie ethnique et, pour les recherches que nous poursuivons, ce n'est pas assez. La Suisse, à cause de sa position géographique, a reçu, à diverses époques, des immigrants appartenant à des races diverses. Mais elle ne peut pas chercher des filiations ethniques aussi loin dans le passé que peut le faire la France; elle a été trop longtemps recouverte par les grands glaciers du quaternaire.

L'origine des populations suisses peut être d'abord cherchée chez les Brachycéphales de l'âge de la pierre polie, édificateurs des stations lacustres, puis chez les représentants de la race nordique qui arrivèrent en Suisse probablement dès la période néolithique, et qui sont déjà nombreux à l'âge du fer. Enfin, certaines parties de la Suisse semblent être peuplées par des représentants de la race dinarique.

L'exacte répartition de ces éléments composant la population suisse n'est pas encore possible, sauf pour de très petits territoires.

La répartition linguistique en Suisse ne correspond pas à une répartition ethnique. La Suisse alémanique n'est pas forcément peuplée par des individus appartenant à la race germanique. Peut-être plusieurs cantons proches de l'Allemagne renferment-ils une plus grande proportion de types nordiques, mais ce n'est pas certain? Peut-être même divers territoires de la Suisse française possèdent-ils plus de ces types que les cantons de langue allemande? N'oublions pas que les cantons du nord-est de la Suisse sont voisins d'une Allemagne dont les hommes n'appartiennent qu'en petite quantité au type de la race nordique. Les invasions germaniques des Alamans, Burgondes, etc., n'ont pas entraîné fatalement des hommes de cette race.

Documents anthropologiques.

La taille (cartes Nos 12 et 13). — C'est le seul document anthropologique qui ait été bien étudié, grâce aux recrutements militaires. Nous connaissons la stature des Suisses selon les petites circonscriptions des districts (cartogramme No 13). Cette stature présente des faits exceptionnels comme répartition dans l'espace qu'il nous est impossible d'expliquer pour le moment. Nous constatons de très petites tailles comme celles des deux demi-cantons d'Appenzell (1.605 et 1.620) qui sont parmi les plus petites statures de l'Europe et des tailles relativement élevées comme celles des demi-cantons d'Unterwald (1.673). (Nous ne parlons pas des statures toujours hautes des cantons exclusivement citadins comme Genève et Bâle-Ville.) Il est inutile, je crois, de tenter, pour expliquer ces variations de la taille en Suisse, des explications mésologiques. Il paraît plus raisonnable pour une telle explication de faire appel à l'histoire. *Grosso modo*, les cantons de la Suisse orientale (les Grisons exceptés) constituent le territoire des moins grandes tailles de la Suisse.

L'indice céphalique. — En Suisse ce caractère est très mal connu (voir cartogramme No 14). De grandes régions n'ont jamais été l'objet d'une enquête quelconque. Le beau

[1] Cette année même la Société suisse d'anthropologie et d'ethnographie discutera des modalités d'une enquête anthropologique étendue à tout le pays.

tableau anthropologique que pourrait montrer la Suisse n'est encore revêtu que de quelques touches sur deux ou trois endroits: le canton du Valais et celui des Grisons, quelques parties de la Suisse centrale et occidentale. Il est impossible pour le moment d'établir une relation sérieuse entre la taille et l'indice céphalique. Nous pensons qu'une grande partie des Suisses, ceux de la région alpine en particulier, appartiennent au groupe des brachycéphales de taille moyenne du type de l'*Homo alpinus*, mais nous ne pouvons pas encore le démontrer.

Nous savons qu'il existe, sur le territoire de la Suisse, une certaine proportion d'individus appartenant à la race nordique; une certaine proportion aussi appartenant à la race dinarique. Mais aucune exactitude ne peut être apportée aux quantités relatives de ces types, ni même à leur répartition géographique précise.

Couleur des yeux et des cheveux. — Ces caractéristique ont été l'objet des plus grandes enquêtes. Malheureusement, elles ont porté surtout sur les enfants des écoles, c'est-à-dire sur des individus qui modifieront très souvent la couleur de leurs yeux et de leurs cheveux lorsqu'ils arriveront à l'âge adulte. La carte N° 15 indique la répartition des types blonds. Elle montre que les pourcentages les plus élevés de ce type se rencontrent aussi bien dans les cantons de la Suisse romande (comme Genève) ou dans la région de la Suisse italienne (le Tessin) que dans les cantons de langue exclusivement germanique. Il semble qu'une coulée de types blonds aux yeux bleus (cartogramme N° 16) traverse la Suisse du nord au sud, de Zurich au Tessin. Mais est-ce bien sûr ?

La carte des types bruns (cartogrammes N^{os} 17 et 18) montre que ce sont les cantons des Grisons, Tessin, Glaris qui en possèdent le plus. Une partie du centre de la Suisse, les deux Appenzell et Genève ont des proportions qui varient de 21 à 25 %. Nous emportons d'une telle enquête une impression confuse, un sentiment de peu de sécurité scientifique.

Toutefois, cette enquête sur la couleur des yeux et des cheveux nous fait pressentir quelques faits qui, s'ils étaient confirmés par de nouvelles enquêtes, mieux ordonnées, pourraient conduire à des interprétations fort intéressantes. Par exemple, le canton d'Unterwald, où nous trouvons une population de haute stature, dont la brachycéphalie est connue, est un canton où la carte de Kollmann signale une faible quantité d'individus blonds. Si nous pouvions associer, dans ce canton, à la haute stature et à la brachycéphalie des cheveux bruns, nous aurions la diagnose presque complète du type dinarique. Mais la carte des bruns donne un résultat à peu près identique à celui fourni par la carte des blonds sauf qu'il est encore plus accentué dans le sens négatif. Alors ? C'est que l'enquête a révélé surtout des types intermédiaires.

La répartition du cancer.

Les taux de mortalité par cancer (voir les cartogrammes N^{os} 9 et 10) sont loin d'être les mêmes partout. L'examen des cantons déjà, puis ceux des districts, montrent des variations considérables. Si, en considérant d'abord les grandes agglomérations relatives que sont les cantons, nous éliminons le canton du Valais, nous trouvons des variations qui vont de 60,8 dans le canton d'Unterwald-Nidwald à 31,4 dans le canton du Tessin. Si l'on élimine ce demi-canton d'Unterwald, les extrêmes sont Schwytz (55,3) et Tessin (31,4). Quelles que soient les éliminations qui pourraient être faites en imaginant que les statistiques de certains cantons sont moins bonnes que les autres, nous restons devant des valeurs maximum et minimum qui laissent entre elles un écart très grand.

Les cantons occidentaux et méridionaux sont moins touchés par la mortalité cancéreuse que les cantons septentrionaux et orientaux (sauf les Grisons qui sont parmi les moins touchés). Dans l'ensemble de la Suisse les femmes meurent un peu moins souvent du cancer que les hommes.

Lorsque, abandonnant l'examen par canton, masse plus considérable, neutralisant les cas extrêmes, on cherche à distinguer ce qui se passe à l'intérieur des districts, on note d'extraordinaires variations dans les taux de mortalité. C'est ainsi que le district de Muri, dans le canton d'Argovie, atteint le taux formidable de 80,1 décès pour 10.000 personnes, laissant bien loin derrière lui les taux cantonaux les plus élevés (le taux du canton d'Argovie est 45,2). Quelques taux très élevés se présentent aussi dans les cantons de St-Gall (60,6), de Schwytz (57,3), de Berne (54,5), Zurich (53,4) et Lucerne (63,2) (voir tableau N° 3). Il ne semble pas qu'on puisse utiliser en Suisse, pour expliquer l'élévation des taux cancéreux dans certaines circonscriptions, la présence de villes importantes dont les centres hospitaliers agiraient comme des aspirateurs de malades.

Dans les neuf cantons qui tiennent la tête des taux de mortalité, nous ne trouvons aucune de ces localités dont l'importance des hôpitaux soit telle qu'elle agisse vis-à-vis des malades comme des cités tentaculaires. Au contraire, des villes comme Zurich, St-Gall, Bâle-Ville, sont dans les groupes intermédiaires de la sériation. Et même Genève, Berne et Lausanne figurent dans le groupe minimum. La concentration des malades en certains points de plusieurs cantons suisses, ne place donc pas artificiellement ces cantons dans des catégories à taux cancéreux particulièrement élevés.

Peut-être, pour expliquer certains chiffres minima, faudra-t-il faire intervenir des faits de statistiques seulement, car plusieurs de ces minima sont inscrits dans des districts à population relativement peu dense.

Les principaux districts urbains dont nous avons calculé les taux en regard de ceux des cantons auxquels appartiennent ces districts montrent presque toujours un taux inférieur à celui des cantons mêmes (se reporter au tableau N° 4). Enfin, j'ai calculé la moyenne des 26 villes contenues dans ces districts. Elle est de 37,9. Ce taux est inférieur au taux moyen de la Suisse entière (40,8).

Le taux de mortalité par cancer en fonction des caractères anthropologiques.

La comparaison des statures, arrangées en plus petites et en plus grandes tailles, semble indiquer que les districts à haute stature de la Suisse allemande (46,48) sont plus touchés par le cancer que les districts de la Suisse française (34,84) (voir les tableaux N^{os} 6 et 7). Mais à cette constatation fort intéressante nous n'osons pas ajouter que ces hommes de haute stature de la Suisse alémanique appartiennent à la race nordique (ou germanique). Il est possible qu'il en soit ainsi, mais nous n'avons pas les éléments pour une démonstration.

D'autre part, nous ne savons pas, pour ce qui concerne la Suisse française, le pourcentage des types de race nordique. Nous ne savons pas non plus, pour ces hommes de haute taille, le pourcentage probable des individus apparentés à la race dinarique.

L'observation ci-dessus (mortalité plus grande des hommes de haute stature en Suisse allemande) concerne des ensembles. Lorsque nous passons à l'examen des districts, nous éprouvons certaines déceptions.

Ainsi les districts à taux maximum de Muri (Argovie), de Willisau (Lucerne), Alt Toggenburg (St-Gall), Diessenhofen (Thurgovie), d'autres encore, renferment des hommes de petite stature. A cet égard, j'imagine qu'une des études qui s'imposent dans le plus bref délai en Suisse est celle de ces districts à taux maximum — et, pour comparaisons, ceux à taux minimum — où la mortalité devra être examinée en fonction de la race et de toutes les influences mésologiques possibles.

Nous avons constaté que l'indice céphalique est beaucoup moins bien connu que la stature. Le cartogramme N° 14 n'est pas une représentation flatteuse de l'œuvre des anthropologistes suisses dans leur pays.

D'autre part, nous avons dit combien étaient encore insuffisants, malgré certaines apparences, les documents relatifs à la coloration des yeux et des cheveux.

Le massif cancéreux du centre nord-est paraît renfermer des populations qui sont en majorité brachycéphales. Cela paraît surtout évident pour les cantons de Lucerne et d'Unterwald. Les cantons septentrionaux de ce massif cancéreux, Zurich et Thurgovie, renferment-ils un grand nombre d'hommes de ce type ? En faisant appel au caractère de pigmentation, nous voyons que ce massif cancéreux ne contient pas un nombre élevé d'individus blonds, non plus d'ailleurs que d'individus bruns. Peut-être les types intermédiaires sont-ils les plus nombreux. Et c'est là surtout que gît pour nous la difficulté.

Quels sont dans ces groupes intermédiaires — composés de bruns et de blonds — de grands et de moins grands, de dolichocéphales et de brachycéphales — ceux qui sont les plus atteints par le cancer ? Lorsque nous avons affaire à des régions anthropologiquement bien délimitées, où de fortes majorités humaines présentent un type défini, nous pouvons imposer nos comparaisons. Ici, hélas ! il n'en est rien.

Les zones faiblement cancéreuses de la Suisse semblent aussi être peuplées par des individus nettement brachycéphales; au moins quelques-unes d'entre elles, comme les Grisons [1]. Cette brachycéphalie diminue dans les groupes de l'ouest. Peut-être, dans ces milieux brachycéphales, les populations les plus brunes (celles qui seraient les meilleurs représentants de l'*Homo alpinus*) sont-elles un peu moins touchées que les populations moins souvent brunes.

De telles présomptions nous ont été offertes par diverses régions. Grâce au tableau N° 9, par exemple, nous pouvons croire que, dans l'Oberland bernois, les districts les plus blonds sont nettement plus cancéreux que les districts les moins blonds.

Mais aucune conclusion positive ne peut être exprimée.

Il est permis de dire, toutefois, que, grâce à ses bonnes statistiques médicales, la Suisse serait un champ d'observation de premier ordre si elle pouvait présenter, à côté de ces statistiques de mortalité par cancer, des documents anthropologiques suffisants. Prochainement, la Société suisse d'anthropologie et d'ethnographie proposera des enquêtes anthropologiques étendues à toute la Suisse. Lorsque les résultats de cette enquête seront connus, nous pourrons reprendre notre travail.

Nous avons constaté, à l'aide des statistiques des taux de mortalité publiées jusqu'à ces dernières années, qu'en Europe la race dinarique paraissait une des moins atteintes par la maladie. Plusieurs observations anthropologiques nous permettent de croire que des représentants de cette race sont disséminés en plusieurs régions de la Suisse, qu'ils sont même groupés en certains lieux, comme dans le canton des Grisons. Avec les quelques bribes de renseignements anthropologiques que nous possédons, j'ai tenté quelques rapprochements entre les taux de mortalité par cancer et les régions où pourraient se rencontrer des populations apparentées à la race dinarique. La mortalité moyenne de ces régions est inférieure à celle de la Suisse entière. Mais je prie les lecteurs de ne pas retenir, pour le moment, ce résultat.

Le taux de mortalité minimum du Valais, laissant loin derrière lui tous les autres taux minimum de la Suisse, ne doit pas nous retenir longtemps. Il est probable que dans ce canton, où les conditions de la vie sociale sont souvent fort difficiles, les statistiques n'expriment pas avec suffisamment d'exactitude les taux de mortalité. C'est fort regret-

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[1] Nous laissons à dessein le Valais à part, quoique ce canton soit à la fois très brachycéphale et, d'apparence au moins, très peu atteint par le cancer.

table, car c'est le canton le mieux connu pour ses caractéristiques anthropologiques [1].

Ainsi, fatalement, les conclusions relatives à la Suisse ne peuvent être que fragmentaires, puisqu'elles ne concernent que quelques régions. De plus, elles n'ont pas grande portée, puisqu'on ne peut avoir la prétention d'étendre à tout un pays des observations locales. Les résultats fournis par la Suisse ne pourront pas être utilisés pour des comparaisons avec d'autres pays.

En terminant, on peut constater que l'inégalité — parfois très grande — de la répartition des taux de mortalité par cancer ne sous-entend pas des localisations géographiques où les conditions mésologiques peuvent être opposées les unes aux autres. Le massif alpin renferme aussi bien des districts à faible mortalité que des districts à forte mortalité. Et il en est de même du Plateau et du Jura [2].

A l'égard de cette dernière région on peut constater que la zone jurassienne n'appartient pas à une catégorie de taux élevés.

Quelles que soient les qualités des statistiques évoquées, elles montrent toutes l'existence en Suisse d'un centre cancéreux important — celui que nous avons rappelé ci-dessus. Cette concentration sera un plan utile pour nos futures recherches. Géographiquement, ce massif appartient en partie au domaine alpin, en partie au domaine du plateau suisse.

Enfin, constatons que la masse linguistique germanique est beaucoup plus touchée par le cancer que la masse linguistique latine.

Il y a encore de beaux jours en Suisse pour ceux qui, cherchant à pénétrer l'étiologie du cancer, étudieront les rapports entre la maladie et les circonstances extérieures qui peuvent aider son développement ou la créer, entre la maladie et la race.

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3. LES PAYS SCANDINAVES.

Le visage anthropologique des trois pays scandinaves apparaît, de prime abord, comme à peu près semblable. Une telle constatation est vraie dans son ensemble. Mais beaucoup de traits présentent de notables exceptions. C'est ainsi qu'en Norvège les enquêtes ethnologiques ont fait apparaître d'importantes agglomérations de types brachycéphales qu'*a priori* on ne s'attendait pas à y trouver, au moins dans une telle abondance.

D'une façon générale, nous possédons sur les trois pays scandinaves de bons documents statistiques et anthropologiques. A ce dernier point de vue tout n'a pas encore été publié et nous attendons, en particulier, avec le plus vif intérêt, les conclusions du comité anthropométrique danois.

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[1] Depuis que ces lignes ont été écrites, un rapport a été présenté par le Dr Carrière, directeur du Service fédéral de l'hygiène publique de la Confédération Suisse, qui montre que les statistiques médicales du Valais doivent être, pour ce qui touche au cancer, soumises à revision.

[2] Je sais bien que, dans l'intérieur des localisations géographiques, il y a d'autres causes qui peuvent être invoquées.

I. LA SUÈDE.

Ce pays présente des taux de mortalité par cancer (voir cartogramme N° 20), assez différents selon les provinces, passant de 42,65 (Stockholms stad) et 38,31 (Stockholms län) à 26,37 (Jämtland). On ne remarquera aucune concentration géographique dans cette répartition des taux de mortalité. Nous trouvons de faibles taux au nord, au centre, au sud du royaume. Les endroits de fortes agglomérations humaines ne paraissent pas plus riches en cancer que les endroits où les populations sont plus clairsemées. Si le groupe très peuplé du centre-est, qui comprend les grandes villes de Stockholm, Upsala, etc., figure dans la catégorie des taux les plus élevés; le groupe méridional, où nous trouvons les villes de Kristianstad, Malmö, Lund, Landskrona, etc., figure dans la catégorie des moins touchés.

Les principaux caractères anthropologiques.

Ils ont été surtout colligés par Retzius et Fürst.

La stature moyenne des Suédois est élevée (voir les cartes N^{os} 21 et 22). Elle dépasse 1 m. 71. Peu de pays présentent, dans l'espace qui leur est dévolu, une pareille uniformité de stature. Une seule province a une taille au-dessous de 1 m. 70: le Lappland, et nous en saisissons aussitôt la raison.

Les indices céphaliques moyens en Suède (carte N° 23) s'échelonnent de 74,8 et 74,9 (province de Södermanland et de Dalsland) à 77,5 (Lappland). Les valeurs de l'indice céphalique ne sont pas réparties non plus selon un ordre géographique particulier. Dans son ensemble, la Suède est nettement dolichocéphale (indice moyen 75,85).

A ces caractères de haute stature et de dolichocéphalie s'ajoutent, pour définir la physionomie ethnique de la majorité des Suédois, des cheveux blonds et des yeux clairs (carte n° 24).

Lorsqu'on établit, en face des caractéristiques de la stature, les taux de mortalité par cancer (tableau N° 9, page 230) on constate qu'il n'y a guère de rapports à espérer d'un tel rapprochement.

Mais lorsque ce rapport est établi avec l'indice céphalique (tableau N° 10, page 232), nous constatons que les provinces les plus dolichocéphales paraissent être celles que le cancer touche le plus.

Pour vérifier l'exactitude de cette conclusion, j'ai composé deux tableaux à l'aide des taux de mortalité décroissants (tableaux N^{os} 11 et 12, pages 233 et 234) et j'ai mis en regard de ces taux les pourcentages des dolichocéphales et des brachycéphales, puis ceux des dolichocéphales vrais (indice inférieur à 75) et des mésocéphales.

A l'aide de ces tableaux, on peut constater que, d'une manière générale, les taux de mortalité les plus élevés sont le fait des provinces où la population est en moyenne plus dolichocéphale, renferme plus de dolichocéphales vrais, mais notablement moins de brachycéphales et de mésocéphales que les autres provinces. Le cancer semblerait donc atteindre plus durement les dolichocéphales vrais.

Néanmoins, plusieurs exceptions peuvent être signalées. L'examen du taux de mortalité en fonction de la couleur des yeux et des cheveux ne donne pas des renseignements intéressants. Il faudrait pouvoir pousser plus loin les analyses à l'aide des fiches individuelles. Nous avons vu à propos de certaines recherches concernant la Suisse combien, lorsque nous avons le moyen d'obtenir des classements plus rationnels que les moyennes, les résultats présentent aussitôt plus de significations.

Il existe en Suède une certaine proportion de types brachycéphales dont en même temps la taille n'est pas élevée. Il semble que les provinces qui renferment les plus forts

pourcentages de ces petits brachycéphales possèdent en même temps moins de cancéreux. Mais la différence n'est pas grande.

En résumé, si la Suède semble montrer que les habitants les plus grands et les plus dolichocéphales sont plus atteints par le cancer que les autres, ce fait même, tout important qu'il soit, doit être soumis à un nouvel examen. Il lui faudrait, en particulier, le contrôle, par la couleur des yeux et des cheveux, que ces hommes appartiennent bien à la race nordique.

II. LA NORVÈGE.

Les taux de mortalité par cancer en Norvège (carte N° 26) s'échelonnent de 24,02 (Nordland) à 40,55 (Bergen). Ces deux provinces, si dissemblables quant à la mortalité de leurs habitants, sont toutes deux des provinces maritimes.

Il y a, selon les provinces, des différences sexuelles assez considérables. Quinze provinces sur vingt présentent des taux féminins inférieurs aux taux masculins.

Les caractères anthropologiques.

Ce sont principalement les travaux d'Arbo qui ont permis d'établir les cartes ethnologiques de la Norvège.

La stature. — La taille moyenne en Norvège doit dépasser 1 m. 71. Comme en Suède, la seule diminution de la stature s'observe dans un territoire septentrional, le Finmark, peuplé, en partie, par des Lapons, des Finnois et leurs métis.

Dans la zone méridionale, les marins et les habitants des littoraux sont un peu moins grands que les terriens de leur hinterland sauf, cependant, dans les provinces de Trondhjem et de Romsdal et ailleurs dans les environs mêmes des fjords.

La répartition géographique de la taille en Norvège (cartogramme N° 27) montre que, sur une surface composée presque uniformément de tailles élevées — 1 m. 67 à 1 m. 70 — existent des îlots où la taille est respectivement beaucoup plus élevée ou beaucoup moins élevée.

L'indice céphalique. — Considérée dans son ensemble, la Norvège est, comme la Suède, un pays dolichocéphale. Mais on ne peut représenter cette caractérisation par une teinte uniforme. L'enquête détaillée des formes craniennes a montré qu'il existe des masses assez imposantes de brachycéphales, également de haute stature. On a cru possible de rattacher ces hommes à la race dinarique.

Le cartogramme N° 28 montre la répartition des principaux types céphaliques en Norvège. On y distingue, à côté de grandes étendues dolichocéphales, des territoires importants de brachycéphales. C'est surtout la population côtière de la partie méridionale du pays qui est pareillement riche en têtes arrondies.

Les taux de mortalité par cancer examinés en fonction de la taille ne donnent pas des renseignements très satisfaisants. Peut-être ces variations proviennent-elles de ce que ces hautes statures appartiennent à deux groupes ethniques différents.

Les taux de mortalité par cancer, en fonction de l'indice céphalique, montrent que les provinces les plus dolichocéphales sont beaucoup plus atteintes que les provinces les plus brachycéphales.

Ici, encore, nous devons renouveler nos suppositions relatives à la présence sur le sol norvégien de représentants de la race dinarique (brachycéphales de haute stature et à plus riche pigmentation). Il semble que celle-ci soit plus réfractaire au cancer que les autres races. La Norvège apparaît, à cause de cette opposition sur son sol de deux groupes humains de haute taille, mais de formes craniennes et de pigmentations différentes, et présentant des taux de mortalité cancéreuse dissemblables, comme une des plus intéressantes régions à étudier au point de vue qui nous retient ici.

III. LE DANEMARK.

La répartition géographique du taux de mortalité par cancer montre, au Danemark, des inégalités très grandes selon les régions. Les anciennes provinces du Slesvig recouvré ont des taux très bas (province de Sønderborg, 29,43) tandis que, plus au nord, toujours dans la partie continentale, les provinces d'Aarhus et de Randers ont des taux très hauts, 52,41 et 52,13.

A cause de l'unité même des conditions géographiques du Royaume danois, il n'y a pas à faire intervenir, semble-t-il, pour expliquer ces différences, des raisons mésologiques.

Les caractères anthropologiques.

Nous les devons à quelques auteurs anciens, mais surtout aux travaux du Comité anthropométrique danois.

La taille moyenne des Danois est relativement élevée (1 m. 695). Mais elle est moins haute que celle des Suédois et des Norvégiens. La partie continentale du Danemark semble avoir une stature plus haute que la partie insulaire. Toutes les observations relatives à la taille permettent de supposer que des populations étrangères au type scandinave ont dû s'infiltrer dans le Danemark.

L'indice céphalique présente au Danemark de grandes variations individuelles. Les Danois sont surtout (classification de Søren Hansen) des sous-brachycéphales. Les indices les plus souvent représentés sont compris entre 75 et 85. Malheureusement, le Comité anthropométrique danois n'a pas encore publié la carte de la répartition géographique de l'indice céphalique.

Les yeux et les cheveux clairs sont prédominants au Danemark. Mais l'enquête sur la pigmentation a porté sur les enfants des écoles et elle a constaté — ce que l'on sait aussi, pour les autres pays — que la pigmentation augmente avec l'âge.

Il semble qu'il existe un rapport entre la stature et le degré de pigmentation. Les districts qui ont la moins haute stature sont ceux où la population a le plus souvent les cheveux foncés.

IV. RAPPORTS POSSIBLES ENTRE LA RACE ET LE CANCER.

Il est très difficile de les rechercher puisque nous ne possédons pas la répartition géographique de l'indice céphalique et qu'il est impossible d'associer avec certitude ce caractère soit à la taille, soit à la coloration des yeux et des cheveux.

Peut-être au Danemark le cancer est-il plus souvent représenté chez les groupes humains dont le degré de pigmentation est le plus accusé, mais ce n'est pas certain.

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4. LES ILES BRITANNIQUES.

Notre étude n'a porté que sur l'Angleterre et le Pays de Galles. Nous réservons l'Ecosse (sur laquelle de bons renseignements ont été publiés) et l'Irlande pour plus tard.

Répartition géographique du cancer.

Les variations dans les taux de mortalité sont très étendues à la surface du Royaume-Uni, aussi bien lorsqu'on s'adresse aux statistiques féminines qu'aux statistiques masculines. Pour chaque sexe, on trouve des différences qui dépassent celles qui vont du simple au triple.

Les comtés à taux minimum sont au centre du royaume (Warwick) puis au nord-ouest (Lancashire). Les taux qui viennent ensuite composent deux groupes: l'un au sud de Warwick: Gloucester; l'autre à l'est de Lancashire: les deux York. Ces deux îlots ont des taux de mortalité par cancer qui ne dépassent pas 19.99 pour 10.000 habitants.

Les taux maxima (40,50) forment également deux îlots; l'un, à l'ouest du Pays de Galles, comprend les comtés d'Anglesey, Cardigan, Carnarvon, Merioneth, Montgomery; l'autre, à l'est de l'Angleterre, renferme les comtés de Cambridge, Huntingdon, Lincoln (Parts of Holland) Peterborough, Rutland, Suffolk-West et Isle of Ely.

A propos de la valeur comparative qu'il faut attribuer aux statistiques des taux de mortalité par cancer, le lecteur est prié de se reporter aux tableaux N^{os} 5, 6 et 7, dès la page 275, où il constatera qu'un phénomène de statistique doit être élucidé. Les comtés les moins peuplés (habitants ayant au moins 45 ans) présentent, en général, des taux plus élevés que les comtés à plus forte population.

Les caractères anthropologiques.

La stature. — Elle mériterait d'être mieux étudiée qu'elle ne l'a été , sur un beaucoup plus grand nombre de sujets dans chacun des comtés. Le fait que le Royaume-Uni n'a pas connu les recrutements militaires obligatoires explique le défaut de documents sur la taille dans toutes les régions de l'Angleterre et du Pays de Galles. Tous les renseignements concordent pour assurer que les Iles Britanniques sont peuplées par des habitants dont la stature est élevée. Elle doit être, en moyenne, égale à celle de la Scandinavie. L'Ecosse renferme les hommes les plus grands de la terre. Les Gallois semblent être un peu plus petits (1 m. 691) que les Anglais (1 m. 706.)

L'arrangement des comtés selon la valeur croissante de leur stature montre la taille minimum dans le comté d'Hereford (1 m. 684) et la taille maximum dans celui d'York (North and East Riding, 1 m. 754).

L'indice céphalique. — Mêmes réserves que tout à l'heure quant à la pénurie des documents. Pour un grand pays comme l'Angleterre et le Pays de Galles, nous avons de trop petites enquêtes, trop clairsemées dans l'espace, insuffisantes numériquement. On peut assurer cependant que l'Angleterre renferme surtout des populations dolichocéphales. Mais pour les comparaisons que nous recherchons, une telle indication globale ne nous intéresse guère. La carte de l'indice céphalique établie avec ce qu'ont révélé les enquêtes actuelles, ne peut certainement pas être considérée comme définitive. C'est un document provisoire.

Dans le Pays de Galles, il est probable que les comtés du nord ont des habitants dont les indices céphaliques sont plus dolichocéphales que ceux des comtés du sud. Ces comtés septentrionaux possèdent aussi une taille plus élevée.

La couleur des yeux et des cheveux. — Les documents enregistrés proviennent principalement des efforts conjugués de feu Beddoe et de la Commission anthropométrique du Royaume-Uni. Ils sont encore très insuffisants.

Le cartogramme N° 38 représente la répartition du type brun. Il semble que l'Angleterre, dans sa très grande partie, ne montre que des valeurs très faibles de nigrescence. Les régions où elle est la plus forte sont d'abord: dans le centre de l'Angleterre, un fort îlot (comtés de Rutland, Peterborough, Huntingdon, Northampton, Bedford, Buckingham); un autre îlot touche le Pays de Galles et fait corps avec lui (comtés de Gloucester, Monmouth, Hereford, Salop, Cheshire); un troisième est composé des comtés de Dorset, Devon et Cornwall. Ce dernier, de tous les comtés de l'Angleterre, a l'indice le plus élevé.

Quant au Pays de Galles, dans son ensemble, il est plus fortement nigrescent que l'Angleterre.

Le cartogramme N° 39 montre la répartition des types clairs, c'est-à-dire des hommes dont les yeux sont clairs (bleus et gris) et les cheveux blonds (et roux). Un tel type est surtout répandu dans les comtés de Northumberland et de Durham, puis, au fond du canal de Bristol, dans le comté de Gloucester. Ensuite, dans l'ordre quantitatif, nous voyons un bloc composé de huit comtés dans la région centre-nord et le Surrey au sud.

Le cartogramme N° 40 montre la répartition des cheveux et des yeux foncés.

C'est le comté de Derby qui possède la plus petite quantité d'individus présentant ce type. Ensuite, vient une masse géographique assez imposante composée des comtés septentrionaux; puis quelques îlots parsemés dans toutes les directions.

Le cartogramme N° 41 établit la répartition des individus chez qui les yeux sont clairs et les cheveux foncés. *Grosso modo*, toute la masse centrale de l'Angleterre figure avec un taux dépassant 55 %.

Le Pays de Galles et l'ouest de l'Angleterre qui, sur la carte de la répartition du cancer, montrent les taux élevés, semblent appartenir, selon Beddoe, à une zone où les indices de nigrescence sont élevés. D'autre part, les cartes obtenues grâce aux enquêtes du Comité anthropométrique montre que les zones très cancéreuses renferment des populations où la statistique décèle des proportions de 40 à 45 % de types clairs. C'est donc que ceux-ci sont nombreux, atteignant presque la moitié des habitants. Il ne reste pas beaucoup de place dans un tel cadre numérique pour loger les types intermédiaires, toujours abondants.

Rapports possibles entre la race et le cancer.

La taille examinée en fonction du cancer. — En Angleterre, les individus très grands et les individus les moins grands fournissent plus que les individus moyens des taux cancéreux élevés à la statistique. Mais une telle conclusion n'a guère de stabilité.

Dans le Pays de Galles, la mise en série de la stature et des taux de mortalité montre que les groupes de plus grande taille sont beaucoup plus atteints par le cancer que les autres.

L'indice céphalique et le cancer. — Ce caractère morphologique est trop peu connu en Angleterre et dans le Pays de Galles pour que nous songions à l'utiliser avec quelque autorité. Il semblerait qu'en certains points de l'Angleterre, où l'indice céphalique est le plus faible, c'est-à-dire où régne la dolichocéphalie la plus prononcée, les taux de mortalité par cancer soient les plus élevés. Mais ce serait prendre bien rapidement de graves conclusions que d'annoncer un tel fait comme démontré. Le Pays de Galles a probablement, dans son ensemble, des crânes plus dolichomorphes que l'Angleterre. Il est aussi beaucoup plus touché par le cancer que l'Angleterre. Avons-nous le droit d'imaginer un rapport entre ces deux éléments de comparaison: la dolichocéphalie et le cancer ?

Les caractères de pigmentation et le cancer. — Nous n'avons pour essayer de tels rapprochements que des documents imparfaits et insuffisants. D'un petit essai tenté à l'aide des 10 comtés les plus cancéreux et des 10 comtés les moins cancéreux, à taille égale, mais à pigmentation différente (selon le Rapport final), il semble apparaître que les comtés les plus cancéreux sont en même temps ceux qui renferment le plus d'individus bruns; mais ce résultat est fragile.

Conclusions. — Le cancer est très inégalement répandu en Angleterre et dans le Pays de Galles. La répartition géographique de ce fléau semble proposer deux régions plus cancéreuses que les autres: l'une à l'ouest, dans le Pays de Galles, l'autre à l'est, en Angleterre. Entre deux, le centre du royaume paraît être la région la moins touchée.

Les caractères anthropologiques et descriptifs de l'Angleterre et du Pays de Galles sont encore trop confus pour que les conclusions ayant force de loi puissent être exprimées.

Par exemple, les formes craniennes des habitants de l'Angleterre et du Pays de Galles nous sont par trop inconnues pour que nous puissions nous baser sur l'indice céphalique des comtés aux fins d'établir entre celui-ci la taille et le cancer un rapport sérieux.

Le Pays de Galles, dans son ensemble, paraît posséder un indice céphalique plus dolichocéphale que l'Angleterre. Or, c'est une région fortement touchée par le cancer. D'un autre côté, le Pays de Galles est une région généralement plus richement pigmentée que l'Angleterre dans son ensemble. Comment comprendre, dans une telle région, cette association d'une haute stature, d'un crâne nettement dolichocéphale avec des cheveux souvent bruns ?

Le Pays de Galles serait particulièrement intéressant à étudier au double point de vue anthropologique et médical. Certaines indications semblent faire croire que cette région est relativement plus homogène, ethniquement, que le reste du royaume. Le cancer y semble aussi plus abondant. Peut-être sommes-nous là, en effet, de par la composition ethnique des populations, dans un milieu biologique plus favorable à la maladie qu'en Angleterre ?

Bien des comtés, en Angleterre et dans le Pays de Galles, attendent encore la première description de leurs caractères anthropologiques. Il faut souhaiter qu'une recrudescence d'intérêt pour les recherches ethnologiques en Angleterre ne tardera pas à se manifester. Tant de problèmes restent en suspens que nous n'avons pas le droit de laisser ainsi.

On a dit, se basant sur la coloration des cheveux et la forme du crâne, que le Pays de Galles pouvait être rattaché au domaine de la race méditerranéenne. Je ne crois pas qu'une telle possibilité puisse être envisagée. En particulier, la haute stature des Gallois s'y opposerait.

VII. QUELQUES OBSERVATIONS FINALES EN GUISE DE POST-SCRIPTUM.

La déception (l'imperfection de nos documents la faisait prévoir) que parfois nous avons enregistrée au cours de nos comparaisons ethno-pathologiques est-elle de nature à nous décourager, à interrompre des recherches qu'*a priori* nous imaginions fructueuses ?

Nullement. La seule constatation qu'il n'y a pas un accord parfait, une relation toujours la même, entre les taux de mortalité par cancer et les diverses races humaines, placées dans des mêmes milieux, soumises parfois aux mêmes conditions générales, nous incite à croire qu'il existe, entre certaines catégories d'hommes envisagées ethniquement et les maladies, un rapport qu'il faut pénétrer. N'avons-nous pas — à titre de seul exemple — pour encourager nos recherches dans ce sens, les résultats obtenus par les greffes cancéreuses sur les animaux de même espèce, mais de races différentes ?

La très grande difficulté pour nous, anthropologistes, c'est que nous ne pouvons jamais travailler avec des races pures, mais seulement avec des groupes biologiques toujours complexes, dont les degrés d'homogénéité varient dans les limites qui, pour chaque pays, ne sont pas encore précisées, puisque, partout, les enquêtes anthropologiques sont encore insuffisantes. Il est impossible de faire un parallèle quelconque entre des expériences faites sur des animaux dont la reproduction est sévèrement réglementée et les hommes chez qui — sauf chez certains clans primitifs soumis à l'endogamie — on ne s'est jamais beaucoup soucié de maintenir la race.

Il est donc bien entendu qu'avec des matériaux anthropologiques imparfaits nous ne pouvons parler que par approximations. La pureté relative des races humaines est une affaire de pourcentage.

Mais ces réserves étant formulées, qu'on ne s'imagine pas que nos mains sont vides. Si les scrupules scientifiques nous poussent à montrer tout d'abord l'insuffisance de nos moyens, il n'en reste pas moins que, tout imparfaits qu'ils soient, nos documents nous autorisent déjà à tenter quelques comparaisons. Celles-ci pourront devenir un jour le point de départ de très importants résultats.

Peut-être le facteur race nous expliquera-t-il un jour — lui et pas un autre — lorsque nous serons mieux outillés pour nos recherches, — les variations des taux de mortalité, quelquefois très grandes — connus par des statistiques comparables — que nous constatons dans les divers groupes ethniques [1].

Si nous ne devons avoir qu'une confiance modérée dans les statistiques médicales de certains pays, il n'en reste pas moins que, vues en masses, et pour citer seulement celles-là, la France, au moins en partie, l'Italie et la Suisse offrent des statistiques utilisables. Or, les différences qui existent, par exemple, entre les taux moyens de mortalité en France, en Italie, et les taux de mortalité des Iles Britanniques et de la Scandinavie, ne peuvent pas s'expliquer par la présence de milieux géographiques différents (il est toujours très délicat de parler de l'influence du milieu sur les hommes) avec tous les comportements de ceux-ci. Et cela d'autant plus que, à l'intérieur de ces milieux mêmes,

[1] Les statistiques comparées des grandes villes où les conditions générales de la vie humaine peuvent être considérées comme à peu près équivalentes et où les taux de mortalité (dans le corps des statistiques égales quant à leur bienfacture) se présentent très différents, montrent bien que, dans le débat, l'élément humain — la race proprement dite — doit jouer un rôle efficient.

on trouve d'extraordinaires variations dans les taux de mortalité. L'Italie, la France, l'Angleterre et le Pays de Galles et la Suisse nous en présentent le phénomène topique. Alors ?

Alors, nous devons tout tenter pour pénétrer le mystère de ces variations.

Les enquêtes médicales selon les subdivisions administratives: comtés, provinces, cantons, etc., ont déjà apporté une contribution précieuse à la meilleure connaissance des facteurs que nous devons mettre en présence.

Représentons-nous dans quel état de plus grande incertitude nous serions si nous n'avions que des enquêtes massives par pays ?

Cette répartition géographique précise du taux de mortalité est la première étape de la division du travail. Il faut tout faire pour l'acquérir. Elle devrait être accompagnée par une répartition géographique non moins précise, dans les limites des mêmes cadres administratifs (ce sont les seuls que nous pouvons avoir), des caractères anthropologiques[1].

Pour obtenir ces documents indispensables, l'influence de la Société des Nations peut intervenir. Elle peut intervenir sur les deux parties en cause. Bénéficiant de sa haute autorité internationale, la Société des Nations peut amener quelques heureuses modifications dans la manière de travailler des deux équipes d'enquêteurs. En effet, les investigations que nous avons poursuivies nous ont amené à cette regrettable constatation que les documents qui nous sont offerts (répartition géographique des taux du cancer et répartition géographique des types ethniques) sont insuffisants pour le but que nous voulons atteindre. Insuffisants en qualité et en quantité.

Dès lors, n'apparaît-il pas nécessaire, étant donné le but poursuivi et les premiers résultats atteints, que les organisations compétentes de la Société des Nations proposent aux administrations de tous les pays de meilleures statistiques médicales, plus exactes surtout quant aux déclarations des causes de décès et aux lieux de ceux-ci ? Il faudrait que, dans toutes les provinces, dans tous les départements, dans tous les cantons, dans toutes les communes d'un même Etat, les déclarations de mortalité soient identiquement inscrites sur un plan dressé après une entente internationale.

Il est inadmissible que des recherches comme celles que nous avons entreprises, qui pourraient conduire à envisager plus sainement l'étiologie du cancer et par cela même conduire à de très grands progrès scientifiques, économiques et sociaux, soient rendues presque impossibles à cause d'une défectueuse documentation. Une réforme s'impose.

Elle s'impose d'autant plus qu'elle n'entraînera aucune création coûteuse. Tous les organismes de la statistique médicale existent. Il n'y a qu'à leur demander un meilleur rendement. Là est le premier but à atteindre. Pendant qu'on y marchera — la route en certains pays sera longue — un concours plus actif des anthropologistes sera réclamé. Il faudrait demander aux Sociétés d'anthropologie, aux Instituts nationaux et internationaux, aux Compagnies scientifiques, aux particuliers surtout une collaboration plus active[2]. Peut-être à la lumière des rapports qui ont été esquissés jusqu'à présent entre la race et le cancer pourrait-on signaler l'intérêt spécial présenté par certaines régions, qu'il y aurait alors lieu d'étudier dans tous ses détails: ainsi des programmes de recherches pourraient être établis dont nous pouvons augurer d'heureux résultats.

Ce sont là quelques suggestions rapides auxquelles, naturellement, peuvent s'en ajouter d'autres. La longue — et parfois dure — enquête que le professeur Niceforo et moi avons

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[1] De tels cadres administratifs ne doivent être considérés, dans la plupart des cas, que comme des pis-aller. Mais, pour le moment, qu'y faire ?

[2] Un premier pas vient d'être fait par la Suisse. La Société d'anthropologie et d'ethnologie de ce pays (Section de la Société helvétique des Sciences naturelles) vient de décider une grande enquête anthropologique sur les recrues militaires. Elle commencera sans doute très prochainement.

entreprise n'aurait-elle que marqué la nécessité de cette entente internationale en vue d'une unification des moyens de travail que j'estime que nous n'aurions pas perdu notre temps.

Mais encore une fois ce serait une singulière erreur sociale et scientifique que de manifester, devant les incertitudes des résultats actuels, l'ombre d'un découragement. En ouvriers conscients de leur tâche et désireux de mieux faire, nous demandons simplement qu'on nous donne de meilleurs outils.

Dans une conférence prononcée en avril 1925 par devant la Société de Géographie de Genève, j'ai essayé de montrer qu'aux caractères extérieurs, — aux caractères morphologiques — correspondaient des milieux intérieurs (Claude Bernard) différents. Les unités biologiques que sont les races humaines réagissenttrès différemment les unes les autres aux mêmes agents provocateurs. C'est ce qui explique la présence de maladies que l'on peut considérer comme raciales.

Pourquoi, alors que toutes les autres conditions sont les mêmes ou paraissent les mêmes, l'unité biologique qu'est la race accepte-t-elle ou refuse-t-elle l'élément pathogénique ? La valeur diathésique du milieu intérieur racial — qu'il s'agisse des animaux ou des hommes — nous est surabondamment démontrée par les effets si différents causés par les mêmes substances toxiques sur des organismes dissemblables. C'est pourquoi notre thérapeutique, basée sur des expériences faites avec des animaux appartenant à quelques espèces seulement, dont les milieux intérieurs sont souvent très éloignés des nôtres, subit tant d'échecs lorsqu'on applique ses résultats aux hommes, à tous les hommes sans distinction.

Depuis quelques années, nous commençons à saisir la variété raciale des milieux intérieurs; depuis qu'ont commencé, principalement avec Hirszfeld, les analyses sanguines dans les divers groupes humains. Malgré que leurs résultats apparaissaient, dès l'abord, comme chanceux, parce que ces analyses portaient en elles, le jour même où elles débutaient, les éléments d'un oubli anthropologique, — (nous n'avons en vue, bien entendu, que nos préoccupations personnelles) — elles ont aidé à démontrer la réalité des variétés humaines.

Une foule d'auteurs, — principalement des médecins, — ont fait des analyses de sang dans tous les continents.

Il est désolant de constater qu'une part importante de ce gros effort est à peu près inutilisable pour nous. En effet, ces analyses ont été effectuées en se basant non sur des groupes raciaux, mais sur des groupes nationaux. On avait devant soi, dans la plupart des cas, les représentants de telle ou telle nationalité, on n'avait pas devant soi les représentants de telle ou telle race.

A priori, nous mettions les plus grands espoirs dans une enquête de cette nature. Nous avions, pour alimenter ces espoirs, quelques faits biologiques qui marquaient par avance que « l'on devait trouver quelque chose ». Les métis ne montrent-ils pas des qualités physiologiques — c'est-à-dire la présence de milieux intérieurs — qui ne sont plus ceux des groupes ethniques qui leur ont donné naissance ? Dans les épidémies de fièvre jaune où presque toujours les nègres proprement dits sont épargnés, les mulâtres paient un tribut parfois considérable. Plus le pourcentage de sang nègre est élevé, plus il semble que la mortalité soit faible. Le médecin américain Nott a pu dire autrefois « qu'un quart de sang nègre vaut mieux pour préserver de la fièvre jaune que le vaccin pour préserver de la variole ». Si une telle formule devait être acceptée, quelle meilleure démonstration pourrait-on donner de la réalité des milieux intérieurs, c'est-à-dire de la composition différente des organes de notre corps, en particulier du sang ? — d'où les résultats variés des analyses sérologiques.

On peut rappeler ici les faits démonstratifs relevés dans l'armée française, lors de la guerre du Mexique. On se souvient que les régiments cantonnés à la Vera-Cruz furent

décimés par la fièvre jaune [1]. Un contingent de nègres envoyés par le vice-roi d'Egypte, composé d'indigènes du Darfour et du Kordofan n'eut, dit-on, pas un malade, alors que toutes les autres troupes, les Kabyles et les Arabes comme les Français, étaient cruellement atteintes. Le contingent des mulâtres « très clairs, faisant retour vers le blanc » venus de la Martinique, fut presque anéanti.

Des faits analogues ont été publiés à propos des épidémies de choléra [2].

Pour donner un rendement utile — nous pensons uniquement au but que nous poursuivons — les analyses sanguines devraient prendre pour point de départ les résultats des enquêtes anthropologiques. Analyser le sang des Français, des Roumains, des Suisses ou des Allemands, sans autre spécification, c'est, on peut en être sûr, aller au-devant de résultats presque toujours décevants [3].

Je crois que, dès maintenant, on peut envisager un complément aux analyses morphologiques en leur adjoignant les analyses sanguines. L'anthropologie, si l'on ne s'occupe que d'elle, a tout à gagner à une telle collaboration. Mais il ne faudrait pas que les analyses sérologiques, parce qu'elles sont à la mode aujourd'hui, viennent se substituer telles quelles aux autres moyens dont nous disposons pour nos enquêtes ethnologiques. Nous demandons l'association, sur un plan déterminé, des deux analyses et non l'exclusion de l'une ou de l'autre. Il est à craindre que dans l'esprit de ceux qui ne sont pas des spécialistes, l'engouement actuel pour les examens du sang des différentes « races » ne vienne jeter plus de troubles encore qu'il n'y en a dans les conceptions ethniques. Les champs que nous cherchons à défricher sont déjà suffisamment couverts de ronces, de broussailles et de cailloux pour qu'on n'y fasse pas fleurir de nouvelles épines.

Pour ce qui regarde spécialement les rapports des analyses sanguines et du cancer il faut applaudir à de tels essais. Etudier le cancer en fonction de telle ou telle composition du sang, en rapport elle-même avec telle ou telle association morphologique, m'apparaît, encore une fois, comme une tâche extrêmement utile.

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[1] Voir Bordier: *La Géographie Médicale*, Paris, 1884

[2] On peut ajouter à ces faits de large envergure d'autres faits non moins significatifs: l'épidémie de suette en Angleterre, s'étendant presque exclusivement dans les pays peuplés par des représentants de la race nordique, ce qui faisait dire à Kayes, « cette maladie nous suit, nous autres Anglais, comme notre ombre »; la gravité particulière de la scarlatine chez ces mêmes Nordiques, etc.

[3] On peut être assuré que les analyses sanguines qui pourraient être faites en France, sur deux ou trois groupes préalablement choisis: nordique, celtique, méditerranéen, par exemple, donneraient des résultats qui ne seraient pas identiques dans les deux ou trois cas ainsi considérés. Il en sera de même dans les Iles Britanniques et ailleurs.

QUELQUES MOTS DES DEUX AUTEURS EN MANIÈRE DE CONCLUSIONS

OBSERVATIONS BY THE TWO AUTHORS IN THE NATURE OF CONCLUSIONS

QUELQUES MOTS DES DEUX AUTEURS EN MANIÈRE DE CONCLUSIONS

Après avoir recueilli et examiné les documents démographiques concernant la mortalité par le cancer, ainsi que les documents anthropo-statistiques concernant la répartition des races dans quelques pays d'Europe, nous nous sommes demandé s'il n'était pas possible de faire intervenir le facteur « race » dans l'étiologie du cancer.

Malheureusement, et cela dans presque tous les Etats, la documentation démographique dont nous disposons ne présente pas, pour le but que nous nous proposions, le degré d'exactitude qui serait désirable. Cette inexactitude ne provient pas seulement du fait que, dans plusieurs pays, les décès sont enregistrés au lieu où ils se sont produits et non au lieu où se trouve le domicile habituel du décédé, elle provient aussi — et surtout — du fait que le diagnostic du cancer étant particulièrement malaisé, il est à craindre que, dans tel ou tel territoire considéré, une partie des décès par cancer ne soit soustraite à la rubrique sous laquelle ils devraient figurer.[1] Quant à la documentation anthropologique, sauf quelques exceptions, elle est loin d'être ce qu'elle devrait être. Elle est très incomplète presque partout; elle est même absente de plusieurs régions, et, pour les pays qui en possèdent une, les données sont parfois présentées sous le simple aspect des moyennes arithmétiques, et non sous celui de sériations ou de tables à deux ou à trois variables; donc sous une forme trop grossière pour pouvoir permettre les études de détail.

Les rapporteurs se sont efforcés de tirer de ce matériel insuffisant tout ce qu'il pouvait donner.

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Ces réserves étant faites, le résultat formel qui apparaîtrait, à première vue, de nos recherches indiquerait que la « race » méditerranéenne *(Homo mediterraneus)* est moins frappée par le cancer que ne le sont la « race » alpine *(H. alpinus)* et la « race » dolichocéphale blonde *(Homo nordicus* ou *europaeus)*.

La place que chacune de ces deux dernières « races » devrait occuper dans une hiérarchie de la mortalité par cancer apparaît encore mal définie. Dans certains pays où ces deux races coexistent, les dolichocéphales blonds semblent plus touchés par le cancer — quelquefois beaucoup plus — que les représentants du type «alpinus» — le cas paraît très net en France, par exemple; tandis que, dans d'autres pays, les faits ne s'inscrivent pas sous cet aspect. Peut-être la « race » dinarique apparaît-elle comme moins touchée que la « race » brachycéphale alpine ! Des zones presque entièrement habitées par des Brachycéphales appartenant probablement à la « race » alpine (et aussi par les « races » alpine et dinarique ensemble) — ainsi la Bavière et certains territoires de l'Autriche — ont des taux extrêmement élevés de mortalité par le cancer. Des zones presque entièrement peuplées par des

[1] D'autre part, et toujours à cause de ces difficultés de diagnostic, il est évident qu'une certaine quantité de décès, figurant sous la rubrique: *cancer*, ne sont pas dus à cette maladie.

OBSERVATIONS BY THE TWO AUTHORS IN THE NATURE OF CONCLUSIONS

After having collected and examined the demographical documents concerning mortality due to cancer and the anthropo-statistical documents concerning race distribution in certain European countries, it occurred to us that it might be possible to consider the factor of " race " in the etiology of cancer.

Unfortunately, in the great majority of countries, the demographical documentation at our disposal is not as accurate as might be desired for our purpose. This inaccuracy is due partly to the fact that in several countries deaths are registered at the place where they occur and not at the place of usual residence of the deceased, and partly, indeed primarily, to the fact that, as the diagnosis of cancer is particularly difficult, it is more than possible that in any given territory a certain proportion of the deaths due to cancer may have been omitted under the heading to which they rightly belong [1]. Anthropological documentation is, with few exceptions, far from satisfactory. It is very incomplete almost everywhere and does not even exist in certain districts, while for countries which do possess such documentation the data are sometimes given simply as arithmetical averages and not in a series, or in the form of tables with two or three variables— that is, in too general a form to admit of detailed study.

The Rapporteurs have endeavoured to obtain from this inadequate material such results as it was possible to derive from it.

* * *

Subject to the above reservations, the positive results ensuing at first sight from our researches would appear to indicate that the Mediterranean " race " *(Homo mediterraneus)* is less subject to cancer than the Alpine " race " *(Homo alpinus)* or the blond dolichocephalous " race " *(Homo nordicus* or *europaeus)*.

The place which these last two " races " should each occupy in any scale of mortality due to cancer still appears uncertain. In some countries where both are found, the blond dolichocephalous type appears to be more subject to cancer — sometimes much more subject — than representatives of the "*alpinus*" type, this being very marked in France, for example, whereas in other countries the facts present themselves under a different aspect. The dinaric " race " appears perhaps to be less affected than the brachycephalous Alpine " race ". Districts inhabited almost entirely by the brachycephalous type belonging probably to the Alpine " race " (and by the Alpine and dinaric " races " together)— such as Bavaria and certain parts of Austria — have very high rates of mortality from cancer. Districts almost entirely peopled by dolicho-blonds (for example, Sweden) also

[1] On the other hand, still owing to the difficulties of diagnosis, it is obvious that a certain proportion of the deaths included under the heading of *cancer* are not due to this disease.

dolichoblonds, la Suède, par exemple, ont aussi des taux très élevés de mortalité par le cancer. Mais nous demandons au lecteur de ne pas oublier que nous travaillons obligatoirement avec des documents massifs qui nous voilent souvent les réalités mêmes.

Les quelques faits que, malgré l'insuffisance des enquêtes, nous avons pu constater nous incitent à croire qu'un travail comme celui que nous présentons devrait être approfondi, non seulement à l'aide de statistiques médicales plus précises, mais aussi en prolongeant notre étude par celle de quelques groupes anthropologiques spéciaux (Nègres, Indiens américains, Japonais, représentants de la race dinarique, Juifs, etc.).

A ces études, il faudrait pouvoir joindre les résultats analytiques des groupes sanguins.

D'autre part, même si l'on pensait faire jouer un rôle, dans certains cas, aux influences des milieux et des constitutions — lesquels pourraient aussi être invoqués comme éléments explicatifs de la répartition géographique du cancer — ces influences seraient bien loin d'exclure celle du facteur racial, étant donné la complexité des faits.

* * *

Les études que nous venons de présenter nous conduisent à émettre les vœux suivants :

1. Il serait désirable que les statistiques des causes de décès fussent améliorées en ce qui concerne l'intervention toujours plus active du médecin déclarant le décès. Les chiffres qui nous seraient ainsi donnés acquerraient plus d'exactitude. Plus on tâche d'élaborer scientifiquement le matériel des statistiques officielles, plus on s'aperçoit que ces statistiques font trop souvent naître des doutes ; le degré de confiance qu'elles méritent n'est pas encore assez grand.

2. Il paraît indispensable que les pays qui n'ont pas encore une connaissance suffisante de leurs caractères anthropologiques poussent activement les recherches nécessaires pour acquérir cette connaissance sans laquelle les études du genre de celles que nous avons entreprises, et d'autres encore, seraient rendues très difficiles, souvent insurmontables.

3. Confiants dans le fait que les résultats des analyses sanguines peuvent, d'une part, conduire à une connaissance plus précise des races humaines, d'autre part, mettre en lumière les rapports existant entre la qualité des « milieux intérieurs » et la maladie, nous émettons le vœu que ces analyses soient pratiquées en tenant compte, non seulement de la nationalité des sujets considérés, mais de leur **race**, c'est-à-dire en inscrivant, à propos de chaque cas, les comportements physiques et descriptifs qui caractérisent celle-ci.

have very high rates of mortality from this cause. We would ask the reader to remember, however, that we are working of necessity on gross data which often leave the actual facts in obscurity.

The few facts which, despite the inadequacy of our researches, we have succeeded in establishing have convinced us that a work such as the present one should be carried on more exhaustively not only by means of more accurate medical statistics but also by extending our enquiry to certain special anthropological groups (Negroes, American Indians, Japanese, representatives of the dinaric race, Jews, etc.).

These studies should be supplemented by the analytical results of blood groupings.

On the other hand, even if one were prepared to admit in certain cases the influence of environment and constitution — which might also be quoted as explanatory factors in the geographical distribution of cancer — it would by no means preclude that of the racial factor, in view of the complexity of the facts under consideration.

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As a result of the investigations referred to, we would submit the following recommendations:

1. It is desirable that statistics of causes of death should be improved by making increasing use of the services of physicians for certifying death. The figures which we should thus obtain would tend to be more accurate. The more one tries to work up on scientific lines the material supplied by official statistics, the more apparent it becomes that these statistics are in many cases open to doubt: sufficient reliance cannot yet be placed on them.

2. It is essential that countries which are not yet sufficiently acquainted with their own anthropological characteristics should actively pursue the necessary researches in order to obtain such a knowledge, since without it studies of the kind which we have undertaken, and other studies as well, must prove extremely difficult and in many cases impracticable.

3. Convinced of the value of blood analyses, from the point of view both of a more accurate knowledge of the human races and of the relations between the " internal medium " (body fluids) and diseases, we recommend that such analyses should be carried out with reference not only to the nationality of the subjects under consideration but also of their **race** — that is, noting, in the case of each individual, the physical and descriptive features characteristic of the race in question.

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